Original Articles.

THERAPEUTIC ARTIFICIAL PNEUMOTHORAX AS ASSOCIATE TREATMENT IN PULMONARY TUBERCULOSIS. A PRELIMINARY REPORT OF SIXTY-TWO CASES.*

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Therapeutic artificial pneumothorax consists of the introduction of a sterile gas under pressure, into the pleural cavity, for the purpose of establishing and maintaining for an indefinite period a complete or partial collapse of an infected lung.

The principal results following the immobilization of a tuberculous joint, and the sudden reversal of the prognosis in certain advanced cases of pulmonary tuberculosis following the accumulation of a pleural exudate, are well known. Coincident with the accumulation of pleural effusion the cough and expectoration decrease, the temperature slowly returns to normal, and the patient's strength and weight also increase. It has been our practice, until recently, to refrain from removing the fluid unless there were well grounded reasons for so doing. Recently, however, we have been replacing the fluid with sterile nitrogen gas.

Carson, in 1821, proposed inducing pneumothorax as a therapeutic measure in pulmonary tuberculosis. Adams, in 1887, reported a case of advanced pulmonary tuberculosis in which the occurrence of an extensive hemoptysis was controlled by the sudden onset of a spontaneous pneumothorax. He, like Carson, recognized the possibility of establishing a pneumothorax as a therapeutic measure, but did not put it into effect. Forlanini, between 1882 and 1894, experimented on the immobilization of the lung, both on animals and also on human beings. At first he introduced various solutions, but, on account of unfavorable results, he discontinued their use, substituting oxygen and atmospheric air. These, too, however, on account of their rapid absorption, he found to be impracticable. Later, on account of its slow absorbing powers, he substituted nitrogen gas. In 1895, he reported the cure of an advanced unilateral case of pulmonary tuberculosis. This condition, which was at first a spontaneous pneumothorax, was maintained by frequent and prolonged introductions of nitrogen gas.

Murphy, in 1898, reported five instances of unilateral pulmonary tuberculosis treated by compression of the lung. At the time of the report all had shown improvement, but had been under treatment for only a few weeks. Schell, in 1898, reported a case of profuse hemotysis controlled by inducing pneumothorax. Lemke, in 1899, an associate of Murphy, made a preliminary report of 53 persons treated, but owing to his early death, a subsequent report was not made. In the years intervening between 1901 and 1911, therapeutic artificial pneumothorax was apparently discontinued in this country. Brauer, in 1906, published for the first time his observations on therapeutic artificial pneumothorax. Lapham, Robinson and Floyd, Rothchild, Balboni, King and Mills, Barnes, Hammon and Sloan and others have recently reported a number of patients treated by this method.

The selection of cases for pneumothorax therapy is difficult, and, in our present state of knowledge, it would seem best to limit its application to that class of cases which fail to respond to the usual sanatorium régime; to those of extensive or recurrent hemoptysis and to those which give a bad prognosis irrespective of the stage of the disease. Cases with an active process existing in both lungs are not suited to this treatment. If the treatment is resorted to with patients who are rapidly approaching their termination, the failures will be many and the unpleasant complications which persistently follow will be embarrassing. That unilateral cases, free from adhesions, will afford the best results is attested by all authorities on the subject of artificial pneumothorax therapy; but that its application should be limited to this class is by no means true, because if it were, its usefulness would be extremely limited.

With a few exceptions all our cases are bilateral, and it has been, and is our rule to refrain from establishing at once a complete collapse of one lung where the disease extends beyond the apex in the opposite one. We have felt that its greatest usefulness in these cases lies in relieving the cough, the amount of expectoration, and the toxemia, by restricting the mobility of the more extensively diseased lung, and later, if conditions are favorable, to establish a complete pneumothorax. In other words, it is our experience that if the disease in the untreated side has extended beyond the apex and is moderately active, the compensatory changes following the collapse of the opposite lung increases the activity of the other. In several instances we have witnessed the disappearance of all physical signs of active disease where the disease has been confined to the apex of the untreated side. We credit this change to the diminished cough, and the expectoration and toxemia following the collapse of the more extensively diseased lung.

Our failures are recorded under three headings:—unilateral cases with extensive pleural adhesions, instances where an active process in

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both lungs extended beyond the apices, and cases which are rapidly reaching the terminal stage.

With the majority of patients, percussion, auscultation or the x-ray will determine the area best suited for the introduction of the nitrogen gas. In not a few cases, however, one will be surprised at the simplicity with which the pleural cavity is reached, although the percussion note and respiratory murmur suggest extensive pleural adhesions. On account of the simplicity of the method, we adopted the operation advocated by Forlanini in preference to the more complicated one outlined by Brauer, which is as follows:—Shortly before the operation the patient is given an opiate. The areas to be operated upon having been determined, the arm is extended over the head, and several pads or pillows are placed under the patient's side to separate the intercostal spaces. Then the area is sterilized, cocainized, and an incision from five to seven centimeters in length is made through the skin, fascia and superficial muscles. The fibres of the intercostal muscles are then separated, exposing the parietal pleura. A dull cannula, with a small opening located upon the side near the point, is then forced through the pleura. A rubber urethral catheter can then be passed through the cannula to palpate the pleural cavity. In this way, one is enabled to determine more accurately the extent of the pleural adhesion if present. When it is determined that the pleural cavity has been reached, and there are no contraindications, nitrogen gas at body temperature is slowly introduced. Brauer advocates introducing from 500 to 1000 c. c. of nitrogen gas at the outset, claiming that it minimizes the danger of perforating the lung tissue during a secondary filling.

Forlanini, without local anesthesia, penetrates the tissues lying in the intercostal space with a small aspirating needle which is attached to an apparatus equipped with a manometer. If the needle is in the pleural cavity, a characteristic manometer reading will follow. The gas is then allowed to flow in. Forlanini introduces from 200 c. c. to 300 c. c. of nitrogen gas at the first sitting and advocates giving small doses at frequent intervals until the lung is completely collapsed. Brauer's operation has many disadvantages, in comparison with the simpler method of Forlanini. It is more complicated and more painful, and cannot be persistently performed several times at the same sitting. It is much easier to obtain the consent of the patient if he is told that the operation is painless and that there will be no unpleasant after effects.

Pleural shock, cardiac dilation, infection, spontaneous pneumothorax, air embolism, pulmonary hemorrhage and recrudescence in the untreated lung are the chief dangers accompanying induced pneumothorax. Floyd cites a fatality in his series caused by pleural shock and cardiac dilation.

Pleural shock comes on suddenly as a rule. We have seen it occur while injecting a solution of novocaine into the pleural cavity, and have witnessed it following the introduction of a small amount of nitrogen gas. The patient complains of a sensation of pressure in the chest near the heart, the pupils dilate, the heart beat becomes rapid and weak, the respiration shallow, cyanosis develops and the patient may become unconscious.

V. Muralt reports a case of pyopneumothorax following Brauer's method, while Hammon and Sloan cite an instance following Forlanini's method. Hemoptysis may occur if the needle is introduced into the lung tissue during manipulation. This happened in one of our cases. We have, in several other instances, punctured the lung but have not caused blood spitting, nor have we had an infection of the pleura follow. Keller and V. Muralt report cases in which a spontaneous pneumothorax followed the secondary filling. This occurred in one instance in our series (Case 9021), and, following a recent secondary filling, it ended fatally.

The possibility of sudden death being caused by air embolism can best be described by relating the experiences of Brauer. While he was giving a second filling the patient suddenly moved. At first there was a feeling of severe pain, following which the patient became unconscious. Later hemiplegia developed, and in a few hours he was dead. In another instance in a patient who had received but one treatment, Brauer was unable to get the characteristic manometer reading and, thinking the needle might be occluded, he introduced a small amount of gas. The patient at once became unconscious, and died in a few minutes.

The one infection which occurred in our series came about in this way. We were unable to get the characteristic manometer fluctuation, and slightly withdrew the needle. The manometer still refused to work satisfactorily and, thinking it occluded with a blood clot, we allowed the nitrogen gas to flow in. When a small amount of gas had been introduced, the manometer recorded a decided positive pressure, after which we withdrew the needle. Within a few hours the patient complained of severe pain extending over the anterior chest. Later, extensive redness and swelling of the tissue developed, and in a few days several dermal incisions were made and large amounts of pus were found to be present. There can be but little doubt that the infection was carried from within, and that the needle was in the extrapleural space when the gas was allowed to flow, spreading the infection throughout the soft tissues.

If the failure of the manometer to work satisfactorily had been regarded, or gas had not been introduced, it is reasonable to suppose that this infection would not have followed, because in all the other instances when we have punc-

tured the lung, with the exception of the slight hemoptysis cited above, no unfavorable complications developed.

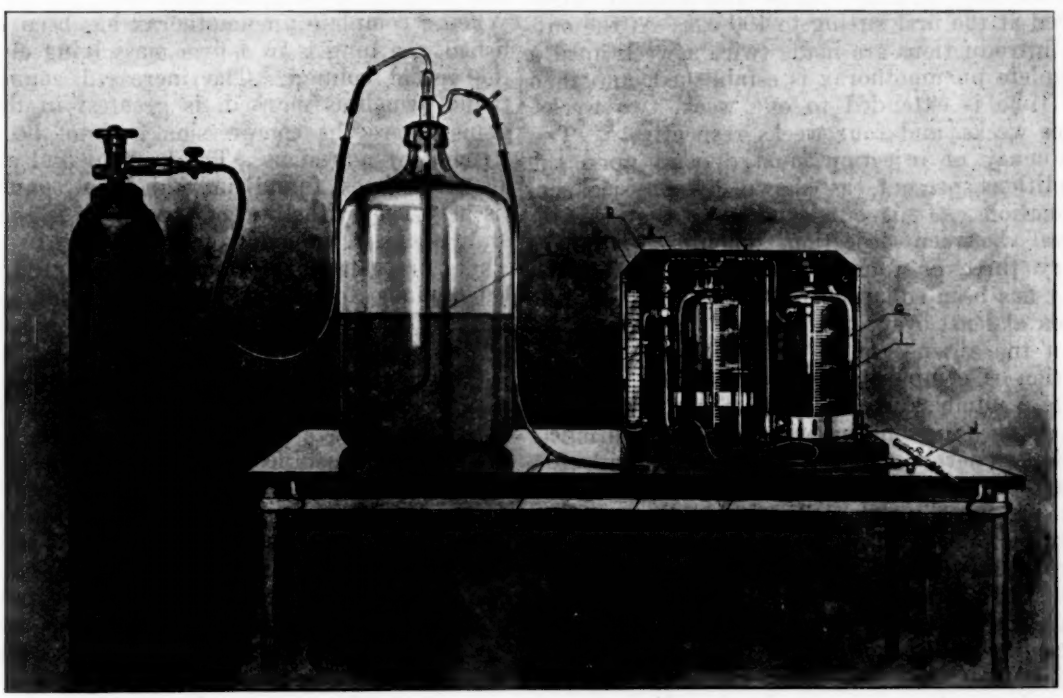
If, during the first few injections, the intrathoracic pressure is raised to too high a degree, the gas will escape through the opening made in the parietal pleura by the needle and invade the surrounding tissues, causing surgical emphysema. While this has occurred in several of our cases, we have witnessed it in but one where it caused any marked discomfiture to the patient. In this instance the patient was an emaciated subject, suffering from a complication of ulcerative laryngeal tuberculosis. During the first treatment following the introduction of 800 c. c. of gas, the manometer registered 1+ positive pressure. After the patient had returned to the ward she had a paroxysm of coughing and, within a few hours, the gas had infiltrated the subcutaneous tissue of the chest, neck, face and scalp. The patient suffered from dyspnea, dysphasia and hysteria for several hours. But within a few days the emphysema had entirely disappeared, and the treatment was resumed.

The apparatus used is the one devised by Robinson; the needle the one perfected by Floyd.

Before beginning the operation, the tubing *H* and the instruments are sterilized by being put into a hot 2% lysol solution for twenty minutes, and then passed through 95% alcohol, and finally rinsed in sterile water. The Robinson apparatus is then connected with bottle *L*, which contains a 1-500 bichloride solution, by tubing *N*, at point *M*. Cock *B* is closed, and cocks *C*, *D* and *F* are opened. The gas from tank *K* is then allowed to wash slowly through the 1-500 bichloride solution in bottle *L*, which in turn displaces the bichloride solution in bottle *E*, forcing it into bottle *G*. At this juncture the valve on tank *K* and cocks marked *C* and *D* are closed. The tubing *N* is then detached, and replaced by tubing H, to which is attached needle *J*.

As before mentioned, the site of the puncture is determined by the percussion note, the respiratory murmur, or the x-ray. Unless contraindicated, we have usually chosen the anterior chest in the nipple line on the right, or the anterior axillary line on the left. The site, however, will be governed by conditions present. One must be careful to avoid the proximity of the heart, the root of the lung and cavities. The patient reclines in bed, or on the operating table with several pillows under the chest to separate the intercostal spaces. The skin is then cleansed with benzine, and painted with tincture of iodine by the nurse. The operator, whose hands have been sterilized, places one or more sterile towels about the field of operation, and a sterile solution of 1% novocaine with 1 to 10,000 adrenalin chloride is then injected, first into the derma, then gradually into the underlying tissues until the pleural cavity has been reached.

This can usually be recognized by the lessened resistance of the plunger. After waiting from two to three minutes a small incision is made through the derma, and the needle *J*, which has been attached to the apparatus by the sterile rubber tubing *H*, is then cautiously forced through the tissues until its point has



established itself into the pleural cavity. This can frequently be determined by the consciousness of the lessened resistance afforded, and the ease with which the point of the needle can be moved about. The trocar is then withdrawn, and the cocks *C* and *B*, governing the manometer *A*, which contains 95% alcohol, are opened.

If the needle is free within the pleural cavity, there will be a negative pressure, depending upon the degree of adhesions present. If the opening of the needle is pressing against the visceral pleura, slightly withdrawing it will frequently give the manometer reading. This characteristic negative pressure will not follow if the needle has penetrated the lung, a cavity, entered a bronchus, or has merely encountered the tissues of the chest wall. If there are extensive adhesions present the manometer variations will be extremely limited, and the negative pressure will be slight, or entirely absent. In case the needle has penetrated the lung tissue, entered a bronchus, the variations will be marked, but irregular, and will give a mean pressure of about zero.

If it has been determined that the needle is in the pleural cavity, cock *B* is closed, and cock *D* is opened, allowing the gas to flow in slowly. The rapidity and force of its introduction may be regulated by elevating the bottle *G*, which contains 2000 c.c. of a warm 1-500 bichloride solution, and the amount given computed by reading the scale *I* on bottle *E*, which contains approximately 2000 c.c. of sterile nitrogen gas.

After each 100 or 200 cubic centimeters have been introduced the manometer reading should be taken, and the amount administered regulated accordingly. It has been our practice to regulate the amount given by conditions present, but we have usually limited the amount introduced at the first sitting to 400 c.c. At the outset, introductions are made twice a week until a complete pneumothorax is established, and then the time is extended to one week, two weeks, three weeks, and four weeks respectively. The frequency of injection must depend upon the conditions present, as shown by physical examinations. It is our experience that the interval between injections should at first be every three or four days, and that after the lung has been collapsed the injections should be given at least every four weeks.

In the absence of pleural adhesions the operation is comparatively simple. We have on quite a number of occasions attempted to break up dense adhesions by injecting gas cautiously under moderate water pressure, but, with few exceptions, we have met with failure. In some few instances we have been able to introduce from 50 to 100 c.c. of nitrogen, but the results have been unsatisfactory, and we have discontinued the practice because of the possible serious consequences. As the operation has not caused any discomfiture to the patient in the majority of cases, we have frequently made several punctures in search of a free pleural space. Under constant moderate pressure pleural adhesions occasionally break or stretch sufficiently to permit the formation of a complete pneumothorax. In four instances where pleural effusion has developed, we have removed the fluid and replaced it with sterile nitrogen gas. In the above mentioned cases the results have been satisfactory.

The technique of this operation is the same as that described above for introducing nitrogen gas. The level of the fluid is ascertained by auscultation, percussion, and an exploratory puncture with a glass aspirating syringe. The needle attached to the nitrogen apparatus is then introduced anteriorly through the intercostal space into the pleural cavity, just above the level of the fluid. Then a large needle attached to a vacuum bottle is introduced posteriorly in the sixth interspace, into the pleural cavity. As the fluid is withdrawn the nitrogen gas is introduced slowly, replacing the pleural exudate. The amount of gas administered should be sufficient to give a neutral pressure, as indicated by the manometer. Gas should not be introduced until the manometer gives a negative pressure, and if this does not occur on account of the fluid present, a sufficient amount should be withdrawn to produce it. Rigid technique should be practiced, lest a hydrothorax should be converted into a pyopneumothorax.

We have had but one instance in our series which developed hydrothorax (Case 9381) to any great extent. Two others developed it in a small amount, but not sufficiently for its removal. In both instances it was readily absorbed.

Graetz, Kistler, Langman and Forlanini have made pathological studies of the lung after it had been in a collapsed condition for months. When a complete pneumothorax has been established, the lung is in a firm mass lying close to the spinal column. The increased connective tissue, which is marked, is greatest in the regions where the compression has not been restricted by adhesions. The bronchi and alveoli are sometimes found imbedded in connective tissue. The epithelium of the alveoli is changed and becomes cuboidal or columnar in type. There are capsular formations surrounding old tuberculous foci, and there is a tendency to callous formation in the region of the blood vessels and bronchi.

Of the sixty-two patients treated in our series two were incipient ones, and treatment was given to relieve frequent hemoptysis. The lungs in both instances have been collapsed since April, 1913, and February, 1913, respectively. There has been no recurrence of the hemoptysis, and for the past several months the sputum has been negative to tubercle bacilli. It is our intention to discharge both these patients at an early date. There were thirty-one cases in the moderately advanced stage of the disease, two in which the prognosis was questionable, seventeen unfavorable, and twelve bad. In three

instances the lung was collapsed to relieve hemorrhage and the experiment was successful. The treatment had to be discontinued with two of the patients on account of a recrudescence of the disease in the opposite lung. One developed a severe hemoptysis in the uncollapsed side (Case 8833) and the treatment had to be abandoned. Four had to be discontinued on account of a recrudescence in the opposite lung, in one on account of neurosis, in three because we were unable to introduce a sufficient amount of gas to expect any results. In two instances the treatment was abandoned on account of the occurrence of pleural shock, on both occasions when we attempted to introduce gas the patient became unconscious. The treatment was discontinued in still another case which developed appendicitis. One died following a spontaneous pneumothorax (Case 9021), and the treatment was discontinued in another case on account of adhesions at the base of the opposite lung, causing marked dyspnea.

Of the fifteen remaining patients, five have been discharged and are doing well, three of this number are at present employed about the institution and are working eight hours per day. The treatment is being continued satisfactorily in the remaining ten cases, many of whom are soon to be discharged.

The greatest number of injections made in a given case was 28, the maximum amount given was 1700 c.c., and the minimum amount was 50 c.c., with the exception of the patients suffering from pleural shock. Here, none was given. In the twenty-nine far advanced cases the prognosis was unfavorable in ten, and bad in nineteen. The treatment was discontinued in eight instances on account of recrudescence in the untreated side, four on account of neurosis, ten on account of dense unyielding pleural adhesions. One died of acute cardiac dilation and pulmonary edema. Of the six remaining patients, one has been discharged as arrested and is working in the institution eight hours per day, three are progressing satisfactorily, the treatment was discontinued in another instance on account of pregnancy, and the one remaining is a spontaneous pneumothorax (Case 9529), and the collapsed lung has been maintained by occasional introductions of gas. The greatest number of injections with any one person was 20, the maximum amount introduced was 1600 c.c., and the minimum amount was 50 c.c.

When the results of the treatment are analyzed, it must be understood that in almost every instance the prognosis was not encouraging and was, in most instances, exceedingly bad. Of the sixty-two cases treated, fifty-eight were bilateral and four were unilateral. The treatment was discontinued in thirteen cases on account of dense unyielding pleural adhesions, and in twelve on account of recrudescence of the disease in the untreated side.

The following cases on account of their special interest are summarized:—

CASE 8833. Female, age 22, waitress. Family history negative. Admitted April 29, 1912, classified as incipient. The presumable duration of the disease was six months. Physical examination on admission: general development good, patient well nourished; the intrapulmonary disease is moderately active and confined to the upper portion of the right lung, extending down to the third rib anteriorly, and to the third vertebra posteriorly. Prognosis favorable. During the third week of residence she had several small hemorrhages amounting to six or eight ounces. From this time on, the disease extended rapidly in the right lung and in a few weeks it had infiltrated its upper two-thirds anteriorly and posteriorly. She lost twelve pounds during the next two months, and on August 2, 1912, 1000 c. c. of gas was introduced into the right pleural cavity. Subsequent fillings were made every few days until the lung was collapsed, and then every few weeks. From August until January, 1913, she gained 11 pounds and the cough, expectoration and tubercle bacilli had been absent several months. The last introduction of nitrogen gas was made on January 10. On January 19 she had a pulmonary hemorrhage of about nine ounces, and for several days following had numerous ones, ranging from three to 11 ounces. A physical examination showed the right lung to be completely collapsed but numerous râles were heard at the base of the left. By April the gas in the right chest had, in part, absorbed, a few fine râles could be heard in the apex. The process in the left lung had extended from the base upward, involving the whole lower lobe anteriorly and posteriorly, and the lower portion of the upper lobe anteriorly. The patient was discharged July 1, 1913, as unimproved.

CASE 9021. Male, age 20, clerk. Family history negative. Admitted August 19, 1912, classified as moderately advanced. The presumable duration of the disease was about seven months. Physical examination on admission: general development poor, slightly emaciated; there are a few interstitial changes in the right apex, and scattered infiltrated areas with moderate activity in the upper one-half of the left lung in front and behind. Prognosis unfavorable. During the first two months he failed to gain in weight and his temperature fluctuated from 97.8° F. in the morning to 102.4° F. (rectal) in the evening. The process in the lungs remained about the same. On October 21, 500 c. c. of nitrogen gas was introduced into the left pleural cavity under slight pressure. The day following the temperature dropped to 99.8° F., slowly to rise again to 100.8° F. on the third day. On October 24, 750 c. c. of gas was introduced after which the temperature returned to normal and remained so. On October 30, 650 c.c. of gas was introduced and a pneumothorax was established, with the exception of a small area anteriorly about the second and third interspace, where the lung appeared to be held down by adhesions. The patient began to gain in weight, the cough and expectoration had almost entirely disappeared, and on November 9 the patient was sitting up an hour a day in a reclining chair. In a few weeks he was up and dressed for the day. The treatments were maintained sufficiently often to maintain a complete collapse of the lung. In January, 1913, the physical signs of active disease had entirely disappeared in the right apex, the temperature continued to remain normal, and the patient

was able to go to the dining room to his meals. During the intervening months until July 18, he continued to make satisfactory progress and was on unlimited exercise. On July 14, after a period of one month had elapsed and a treatment had been given, the manometer reading was very limited, tending to be slightly negative. After 150 c. c. of nitrogen had been introduced, a pressure of 4+ was produced. A physical examination showed the lung to be collapsed against the point of adhesions in the second and third interspace near the sternum. Three days following, on the 17th, the patient had a severe coughing spell, and complained of dyspnoea. On the following day the temperature rose suddenly to 104.5° F. (rectal) and the pulse was rapid, 140, and weak. A metallic tinkling was heard all over the left chest extending to the bottom of the right pleural cavity, about four inches from the median line. He grew worse, and died on the night of the 20th. We were unable to obtain a post mortem examination, but the assumption is that the visceral pleura was torn during a paroxysm of coughing, and this resulted in the formation of a valvular pneumothorax. Death was due to shock, cardiac dilation, and pulmonary oedema of the untreated lung.

CASE 8783. Female, age 17, student. Family history negative. Admitted March 25, 1912, classified as moderately advanced. The presumable duration of the disease eight months. Physical examination: general development good, well nourished, color of lips and mucous membrane pale. There is a general infiltration scattered throughout the left lung with moderate activity, the right lung shows an incipient lesion in the extreme apex. Prognosis unfavorable. Sputum positive 6 Gaffky. During the first six months of residence she slowly declined, the cough was marked and troublesome, the expectoration increased, and there was persistent loss in weight. On September 30, 1912, 550 c. c. of nitrogen gas was introduced, under slight pressure, into the left pleural cavity. The lung movement became restricted, the râles fewer, and the breath sounds faint. October 4, the manometer gave a decided negative pressure and 600 c. c. of gas was introduced. The patient's condition afterward was good and the manometer showed that the negative pressure had been greatly reduced. Following the treatment the physical signs were the same as on September 30. Subsequent fillings ranging from 300 to 600 c. c. were given twice weekly for the next three weeks, at the end of which time the lung had completely collapsed. The period between treatments was then extended to one week, two weeks, three weeks, and four weeks respectively. With the exception of the treatment given on the morning of January 10, 1913, at which time 825 c. c. was introduced, the patient stood the operations very well. The physical examination before the introduction of gas on this occasion showed a complete pneumothorax. The manometer reading was negative, and a sufficient amount of gas was introduced to obtain a positive pressure of 4 cm. of alcohol. The patient's condition immediately following was satisfactory. About 2 p. m., she experienced a slight pain in the chest, and in attempting to find relief got out of bed and walked the floor, following which she became short of breath. The respiration ran up to 40 per minute, and she became cyanotic. The heart action was rapid and weak, with a pulse of about 140. The patient was extremely excited. A subcutaneous injection of morphine sulphate, grs. ⅛, and atropine sulphate, grs. 1-100, was given, following which the heart quieted down and the respiration became less labored, and less frequent. The temperature, which was at first subnormal, rose to 101° F. Bromides in small doses were given every two or three hours during the night, and on the following morning the respiration had dropped to 24 per minute, the pulse was full and strong, and rated about 120 to the minute. We kept her in bed until the 14th, at which time she got up and went, in a day or two, to the dining room for her meals. This was a distinct evidence of cardiac dilatation brought on by too great an intrathoracic pressure, aggravated by the patient's exercising. On January 20, the pressure was negative and 450 c. c. was introduced, giving a slight positive pressure of about 1 cm. of alcohol. There were no unfavorable symptoms following this and subsequent treatments. The patient from the beginning of the pneumothorax treatment began to gain in weight; the expectoration and cough increased at first, then decreased, and in a short time disappeared altogether. The last injection, 500 c. c., was made on August 13, 1913, and the patient was discharged as an arrested case on the 15th of the following month. On repeated examinations during the last eight months of residence, the sputum was free form tubercle bacilli.

CASE 9094. Male, age 17, student, youngest of nine children. Family history negative. Admitted October 4, 1912, classified as moderately advanced. Physical examination: general development poor, fairly well nourished, net weight on admission 120 pounds. There is an infiltrated area in the upper lobe of the right lung with slight activity, and a general infiltration throughout the upper two-thirds of the left lung with moderate activity. Prognosis unfavorable. Sputum positive 6 Gaffky. During the first month of residence the patient's condition was unchanged, his temperature and pulse irregular. At times the temperature would suddenly rise to 102° F. (rectal), then in a few days slowly drop to normal. The daily maximum pulse rate was 130 beats per minute. His cough was moderate in extent, and the 24-hour amount of sputum was approximately 75 c. c. He had gained but two pounds in weight. On November 8, 1912, 800 c. c. of nitrogen gas was without difficulty introduced, under slight pressure, into the left pleural cavity, in the anterior axillary line. The manometer, which registered a marked negative pressure, was greatly reduced, but did not become neutral. Following the introduction of the gas the râles could be heard faintly, and breath sounds and respiratory excursion was diminished. The patient was transferred to the recovery room. Shortly afterward he complained of severe pain in the left chest, following which he became pale, his pulse fell to 40 and became slow and weak, after which he lost consciousness. Within a few minutes he regained consciousness and one drachm of aromatic spirits of ammonia was given. The pulse returned to normal within the next half hour. The patient was comfortable the following day, the maximum temperature being 101° F. (rectal) and the pulse 124. Within three days the temperature and pulse returned to normal and remained so until his discharge. Another treatment was given on November 20 in which 500 c. c. of gas was introduced without any ill effect. A com-

plete collapse of the lung was brought about on Nov. 22, at which time 600 c. c. were introduced. This complete collapse continued at the time of his leaving the institution, on December 24, with his disease arrested. In all, 26 injections varying from 1250 c. c. to 250 c. c. in amount were administered at different intervals. The last treatment was given on November 31. He had gained 17 pounds in weight and his cough and expectoration had completely disappeared. His sputum, during the last six months of residence, was negative to tubercle bacilli.

Case 9517. Male, age 27, laborer. One brother died of pulmonary tuberculosis two years ago. Admitted September 6, 1913, classified as moderately advanced. General development poor, poorly nourished and anemic. The disease was confined to the upper two-thirds of the right lung. On October 10, the right chest was found to be larger than the left, and was bulging. Percussion showed that the flatness extended up to the fourth interspace. Over this area the voice and breath sounds were absent, and over all of the left chest there was an exaggerated breathing. A small aspirating needle was introduced into the right chest and 1 c. c. of clear serum was removed. This was found to contain tubercle bacilli. On October 15 the needle attached to the nitrogen apparatus was introduced into the pleural cavity in the mammary line and above the line of flatness. The manometer recorded a positive pressure. A large needle attached to an aspirating bottle was then introduced into the pleural cavity, posteriorly, in the sixth interspace in the mid-scapular line. After a small amount of fluid had been removed the manometer gave a slight negative pressure. Then, slowly 1250 c. c. of gas was introduced and, at the same time, we removed 1200 c. c. of pleuritic fluid. The manometer at this juncture gave a pressure of 10+ and, thinking it too great, we reduced it to 4+. The patient suffered no discomfiture or ill effects. There was no alteration of the pulse during the operation, nor was there at any time a tendency to cough. The pneumothorax has been maintained by frequent introductions of gas, and to date, there has been no reaccumulation of the fluid.

Case 9529. Male, colored, age 30, physician. Family history negative. Presumable duration of disease 15 months. Patient was admitted on September 15, 1913, classified as far advanced. General development good, poorly nourished. Pulse 120, irregular and thready; temperature 103° F. There was a marked bulging of the right side, and on percussion, flatness up to the fourth interspace. By oscultation over the area above, there could be heard a distinct metallic tinkling, the breath sounds were absent and there was a decided hyper-resonant note on percussion. The left lung appeared normal. Diagnosis, hydro-pneumothorax. Seven hundred cubic centimeteres of fluid were at once removed, but this did not relieve the patient. His condition remained critical and on October 15, 2400 c. c. of fluid was withdrawn, and 1450 c. c. of nitrogen gas introduced. After this, his temperature dropped one or two degrees, and he was more comfortable. On October 22, 710 c. c. of fluid was withdrawn and 750 c. c. of nitrogen gas was introduced. On November 6, 1200 c. c. of fluid was removed and 1200 c. c. of gas was introduced. On November 24, we removed 310 c. c. of fluid, but did not introduce nitrogen gas, as it was not considered necessary. Again on December 31, 1150 c. c. of fluid was removed and 600 c. c. of nitrogen gas was introduced, following which the manometer recorded a neutral pressure. The patient's condition is somewhat improved and a complete collapse of the impaired lung is present, but the outlook is unfavorable.

Therapeutic artificial pneumothorax will give the best results when administered to those suffering from unilateral pulmonary tuberculosis free from adhesions. That its application should be confined to this class of patients is by no means true, and if it were, its usefulness would be extremely limited. Bilateral cases in which the active disease in the untreated side is limited to the apex, will, in many instances, show satisfactory improvement after being subjected to this treatment. When the treatment is resorted to where the active disease has extended beyond this point in the untreated side, the results will frequently be unsatisfactory.

The replacing of tuberculous pleural effusion with sterile nitrogen gas will prevent the formation of pleural adhesions and will prevent the reaccumulation of the fluid.

It is our belief that artificial pneumothorax therapy is applicable to a very limited number of advanced cases of pulmonary tuberculosis, and that the best results will follow its careful administration in that class of incipient and moderately advanced patients who fail, after a reasonable length of time, to respond to the older and better known forms of treatment.

THE FUNCTIONS OF A DISPENSARY OR OUT-PATIENT DEPARTMENT.

By Michael M. Davis, Jr., Ph.D., Boston.

Director of the Boston Dispensary.

In 1687 the medical profession of London, stirred by the evident amount of unrelieved illness in the growing metropolis, voted, through their official organization, the College of Physicians, that all members should give, without charge, their services to the poor. They transmitted this resolution in due form to the Lord Mayor and Aldermen. At the end of the seventeenth century the drug-shop was more in the foreground of medical treatment than it is today, and, unfortunately for the charitable intentions of the medical brethren of London, the pharmacists of the city were organized as "Apothecaries' Hall," the guild of the trade; and the prices of prescriptions established by the guild were beyond the means of the poor. Although the physicians were prepared to donate their services, Apothecaries' Hall would not reduce its prices. Fifty leading members of the

profession, therefore, roused to carry out their intentions despite the monopoly of the prescription market, paid ten pounds apiece to Dr. Thomas Burwell, one of their number, and established their own dispensary, with capital sufficient to provide a supply of medicines for the poor. Thus, about Christmas time, 1696, the first dispensary was opened in London in the building of the College of Physicians, and within five years after its foundation, had dispensed 20,000 prescriptions.

About the year 1700 leading physicians of London complained that the public seemed to be more impressed by the dispensation of medicine than by the freely-given services of the medical men. The dispensary appears to have been regarded as a medical soup kitchen. The dole of medicine to the sick poor seemed equivalent to the coffee and roll of the bread line.

TEACHING "MATERIAL."

Sir William Osler in his "Remarks on the Function of an Out-Patient Department" at the opening of the new out-patient building of the hospital at Cardiff, in 1908, expressed another function of a dispensary:

"That an out-patient department is simply for the relief of the poor—the common idea—is to take an altogether too narrow view of its functions. . . . Of course the first and most important (function) is the relief of the poor. . . . In acting as the training school for the younger members of the profession, the out-patient department fulfills its second great function. . . . With sufficient staff, there is no reason why just as careful notes should not be taken in these rooms as in the wards, and let me remind the younger physicians in the audience that some of the most brilliant reputations in the profession of this country have been built up upon the solid foundation of notes taken in out-patient departments. Let me urge you to make ample provision for your medical students in the out-patient department, where they see the patients in their native state, so to speak, before they have been scoured and cleansed by the nurses in the ward."

A well-known institution in one of our largest cities advertises, in a circular designed to attract students to its post-graduate courses, that the "daily average of dispensary patients admitted as clinical material" is 550. When a dispensary is closely affiliated with a medical school, supplying the students with "material" will usually be the prime reason for the interest of the medical staff in a dispensary. When a dispensary is an out-patient department of a hospital whose teaching functions are absent or at least not prominent, the medical staff is largely interested in the dispensary because it supplies patients to the beds in the ward. In either case, the medical interest in the dispensary, as such, is secondary.

Dispensaries and out-patient departments, as we know them today, have developed under the joint stimulus of two forces: the charitable impulse to relieve the sick poor, and the medical impulse to secure clinical material for hospital study or for teaching purposes. The dispensary has thus been—either or both—

1. A medical soup-kitchen,—
2. A medical feeder.

As a medical soup-kitchen,* the dispensary has not been taken very seriously by the lay public. As a medical feeder, it has not been recognized by physicians as possessing distinct functions of its own. Both as a medical and as a charitable institution it has been over-shadowed by its rich relation, the hospital. Though the hospital beds treat fewer patients than the dispensary clinics, in the wards appear the crises and climaxes of disease which are usually more dramatic, and apparently more important. Certain advances in medical science, together with the rapidly-growing interest in public health work, raise the question as to whether the dispensary or out-patient department has any distinct functions of its own, and whether, if so, dispensaries are at present so organized as to fulfill these functions properly.

THE ORGANIZATION OF SPECIALISTS.

The practice of medicine, in advancing from an art to a science, as it did during the latter part of the nineteenth century, has necessarily developed in too many directions, and too intensively, to enable the whole to be mastered by any one mind. At the present time, thorough medical work almost always involves, or ought to involve, more than one medical man. To put this in another way, no person can receive medical care today, on a level with the best standards, from the hands of a single practitioner. A man with symptoms of "indigestion," before his disease can be properly diagnosed, will probably require an examination by an internist, an x-ray expert, a surgeon, a laboratory worker and an oculist. The best medical work requires coöperation in diagnosis and team-play during treatment. This coöperation and team-play is impossible, or is uneconomical, without organization. So long as the specialists work independently in their respective offices, their coöperation is far too expensive for any but the well-to-do to afford.

In the modern hospital the medical service has been organized for the benefit of bed patients, with splendid results. In the best modern dispensaries it has been organized similarly for ambulatory patients, with excellent results. The dispensary represents an association of specialists, who, meeting in the same building simul-

* The phrase is obviously unworthy of the really fine spirit of service which usually actuates the medical and lay managers of dispensaries; but it does suggest the point of view from which dispensaries have been commonly regarded by laymen.

taneously, or at times near together, can give to any patient the benefit of joint consultation. The medical men themselves also profit greatly in thus learning from one another. Moreover, the dispensary offers laboratory and x-ray facilities and other medical equipment on a scale rarely available in the private offices of physicians. The medical principle on which the dispensary is founded is that of the organization of specialties, and this is one of the important functions of this type of institution, a function which is likely to play a large part in the medical practice of the future.*

SPECIAL MEDICAL FIELD OF THE DISPENSARY.

So long as the dispensary or out-patient department is regarded as a "medical feeder," its "clinical material" is habitually classified by the attending physicians as follows:

1. Routine cases.
2. "Interesting" cases.

The "interesting" case means, as a rule (*a*) a patient with an unusual or rare disease; (*b*) a case of developed acute serious disease requiring hospital care or operation; (*c*) a case of value for teaching medical students.

That a patient makes any of the above contributions to medical experience is a legitimate ground for medical interest in him. From the standpoint of the public health, however, the medical material in an out-patient clinic must be classified differently. From this angle a rough division of the typical medical field of the dispensary may be made:

1. Minor surgical accidents.
2. Serious diseases.
   a. In their early and often preventable stages.
   b. In their convalescent stages following bed treatment in the hospital or at home.
3. Certain serious diseases which do not usually require any period of bed treatment; *e.g.* gonorrhea.
4. Minor diseases. Often these, if not properly cared for, will diminish earning capacity, or lessen resisting power, so as to lay the way open to serious disease.
5. *a*. Diseases of special organs; *e.g.* the eyes, the ears, the teeth, the throat, etc.
   b. Developmental defects of childhood.

* Dispensaries and out-patient departments are ordinarily supposed to treat only "the poor," as are the ward beds in the hospital. "The poor" and the well-to-do thus have easy access to the best medical service today. The self-supporting middle classes, including the great majority of the population of cities and towns, have not access to such service; nor have rural communities. We may expect in the near future to see the need for better medical service to this middle class met on an organized basis. Groups of physicians representing different and complementary specialties will probably organize in groups, so as to make high-grade, coöperative diagnosis and treatment accessible to those who call themselves neither "worthy," nor "poor," and who can pay moderate fees. This will not mean cheap practice, but organized practice. The joint use of equipment and the diminution of wasted time on the part of the medical men, will render a more economical and a more scientific service to patients both practicable and profitable. Modern medicine is inconsistent with its own standards unless its service is organized to meet the needs of the mass of the people as it now is for the two social extremes.

A brief summary will show the practical bearing of this enumeration.

Minor surgical accidents constitute a considerable part of the "medical material" at many dispensaries. Prompt, efficient treatment of these accidents means the saving of large sums of money by reducing the period during which an employee is incapacitated. The community as a whole, and employers of labor in particular, have a direct economic interest in seeing that surgical treatment in out-patient departments is efficient. From this standpoint, a surgical out-patient clinic is not a medical feeder to the hospital, but has an important economic as well as humanitarian function of its own.

Modern medicine has emphasized the importance of diagnosing and treating *serious diseases in their early stages* whenever possible. In a dispensary, cancer, heart disease, kidney troubles, digestive and intestinal disorders, and tuberculosis, appear early in their course. In an efficiently-conducted dispensary with adequate laboratory facilities, accurate and early diagnosis of these troubles is practicable—often even more so than in private practice. The dispensary thus has a function of the utmost importance from the standpoint of the public health, and not at all dependent upon its relation to the hospital: the function of detecting serious disease in its early and often preventable stages. This function of the dispensary has been recognized in a large way in the anti-tuberculosis movement. During the last ten years this has become a great national campaign — better organized, better financed, than any other general public health movement. In 1905, when the campaign was in its infancy, there were 18 tuberculosis dispensaries in the United States. On May 1, 1913, there were 389, distributed over 35 States of the Union. The leaders of the anti-tuberculosis movement recognize that the dispensary, with its physician and visiting nurse or social worker, is as essential in the diagnosis and control of early tuberculosis, and in the control of cases discharged from institutions, as are the hospitals and sanitoria themselves in the treatment of the disease at a later period. Pennsylvania has placed a state tuberculosis dispensary in every county. State laws have been enacted in Massachusetts, New Hampshire and elsewhere, which, when finally enforced, will cover these states with a tuberculosis dispensary system.

OUT-PATIENT WORK IN MENTAL DISEASES.

In another branch of medicine a campaign has been organized,—against *mental disease*,—and a National Committee on Mental Hygiene is now at work, with several state branches. This committee is urging the establishment of out-patient departments and dispensaries for mental disease, either in connection with hospitals for the insane, or separately. The Psychopathic Hospital in Boston and the Phipps Psychiatric Clinic in Baltimore have out-patient depart-

ments already at work, and there are indications, especially in New York, that many more will follow. Such clinics, whether large or small, will fulfill the double function (2 *a* and 2 *b*) of "spotting" and of diagnosing mental disease in its early stages, and of caring for the discharged or the convalescent cases that have been sent out from hospitals for the insane.

Early diagnosis of *internal cancer* provides at present the only hope of its cure, and the newly organized "American Society for the Control of Cancer" has already called attention to the important part which dispensary clinics should play in detecting cancers in early stages, and bringing them to operation at a time when surgery can really accomplish a cure. The gynecological section of the Associated Out-Patient Clinics of New York City has issued a special circular on this point.

CHILDREN'S DISEASES.

Another important group of serious diseases which are the special province of the out-patient clinic, are certain acute functional disorders of early childhood, particularly the gastro-intestinal and bronchial. The baby or little child who has a digestive upset may be at death's door if seen tomorrow, but on the road to speedy cure if taken today. The mother is ready to take the child to a hospital when the doctor assures her that hospital care is necessary to save the child's life, but she is willing to bring the child herself to the dispensary *before* the child's life is in danger. The function of the pediatric out-patient clinic is not to supply the hospital wards with sick children. Its proper end is to keep children from becoming sick enough to need the hospital. Recognizing this, pediatricians have developed an extensive dispensary system as part of the campaign to reduce infant mortality. This is another public health movement which has also been organized throughout the United States in the National Association for the Study and Prevention of Infant Mortality, with some eighty local societies engaged in field work in different cities and towns.

The out-patient clinic now holds a recognized place in the program of this national campaign. In addition to the many out-patient clinics for babies and young children in connection with general hospitals or children's hospitals, at least 150 special clinics for preventive work with babies have been established—often called "Consultation Clinics."

VENEREAL DISEASES.

There are two diseases, of the first importance, which the dispensary may almost be said to have for its special province: gonorrhea and syphilis. The complications of gonorrhea and the later manifestations of syphilis bring many patients to the hospital wards. Yet large though the number of these bed-patients is, they represent only a fraction of the total who suffer from the venereal scourges. The large majority demand treatment as ambulatory cases. This treatment is secured in one of four ways:

1. From private physicians in their offices.
2. At dispensary clinics.
3. In the offices of advertising doctors, or at medical "institutes," or by correspondence with such "institutes."
4. Self-treatment — the patient prescribing for himself on advice obtained from friends, from literature, or from drug clerks, with drugs bought at pharmacies.

No one knows the relative proportion of patients who secure treatment through each of these four sources, but three points are clear: (*a*) the last two agencies of treatment are thoroughly undesirable; (*b*) they are widely used; (*c*) this fact is evidence that the desirable agencies of treatment are, for one reason or another, not adequate to the immediate existing needs.

Can private practice be developed to meet these needs? The fact is that, despite increasing numbers of physicians, and increasing competition for practice, private practice does not so develop. Furthermore, the treatment of gonorrhea and syphilis in private offices is seriously handicapped by lack of the best modern facilities for diagnosis, and also for treatment. These facilities are too expensive to be at the command of the average practitioner who treats these diseases.

There is a rapidly advancing campaign against venereal disease. At the present time this campaign is concerning itself especially with the problem of education in sex hygiene; but the increase of facilities for the treatment of venereal disease must also be a part of the program. From preliminary reports of the hearings of the British Royal Commission on venereal disease, it appears that this commission will probably recommend a great enlargement of well-equipped dispensary clinics for gonorrhea and syphilis. The recent book by Abraham Flexner on "Prostitution in Europe" shows that much has been accomplished by the municipal dispensaries for venereal disease developed in Scandinavian countries. Under the present and the probable future conditions of private medical practice, American communities may find that the enlargement of dispensary facilities is the only means by which adequate opportunities for treating venereal disease can be provided.

"MINOR" DISEASES.

What are commonly called "minor diseases," often have more than minor effects upon the health and working efficiency of the sufferer. Such diseases, which do not confine the patient to his bed, fall particularly within the province of the dispensary: for example, many skin diseases, very troublesome, and in some instances infectious; the common cold and its sequels;

nervous disturbances; digestive disorders; septic processes of hands and feet, together with minor surgical injuries among working people; and a large proportion of the diseases and defects of special organs, particularly the throat, nose, ears, eyes, and teeth. New demands have come upon the dispensary because of the growing sense that "minor" diseases are important. Medical school inspection is adding more to this demand than any other factor. When medical school inspection is carried out to the extent which now obtains in a number of cities, almost the entire population between the ages of six and fourteen years receive periodical medical examinations, and an enormous number of defects, as well as functional diseases, are revealed. Questionable eyesight, bad teeth, defective hearing, enlarged tonsils, occluded nasal passages, postural defects or malformations are found to be widespread.

The community at once realizes that it is of little value to spend money in discovering such defects unless it is prepared to remedy them after they are found. In every city where medical school inspection has raised this problem, private medical practice has proved itself incapable of solving it. A large proportion of the children never secure treatment because their parents cannot pay for it. Much of this treatment involves work by specialists, such as operations in special surgery. Even self-supporting, working-class families cannot afford the usual fees charged for such work at private offices. Consequently dispensary clinics have been extensively used, in a number of cities, as a means of providing needed treatment. Even with this aid the need has nowhere been fully met, and the demand for additional clinics is becoming insistent. Dental clinics for school children have been established in several cities. School eye clinics have been begun by the board of health of New York City.

To recapitulate: The typical medical material of the dispensary includes some of the most prevalent and dangerous diseases: tuberculosis, syphilis, gonorrhea, cancer, infantile disorders; and these appear chiefly in the stages when they can be most advantageously cared for. Within the special province of the dispensary are that great mass of diseases which are individually called "minor," but which collectively are the major part of private medical practice: the disorders and impairments of the special sense organs; the developmental defects of childhood; and last, but not least, the convalescent stages of disease following bed care.

THE DISPENSARY AND THE HOSPITAL.

The task of the dispensary is its own: it is not merely secondary to that of the hospital; and though the hospital and the dispensary are mutually interdependent, each has its own place in the public service. The hospital needs the dispensary for three reasons, which might be summarized in three words: the dispensary feeds, follows up, and forestalls the hospital. The out-patient clinics feed the wards of the hospital with which they are connected, or of other hospitals in their community. When a patient is able to leave a hospital bed, he frequently requires further medical supervision. This the out-patient clinic, if properly equipped, can provide, with benefit to the patient and direct economy to the hospital. Many are the re-admissions to the hospital wards caused by too early discharge at the first admission. The dispensary bridges the gap between ability to walk and ability to work.

Finally, by detecting serious disease in its early stages and by successfully treating minor defects and diseases which lead up to serious illness or infection, the dispensary keeps patients from needing hospital care. Inasmuch as bed care, on the average, costs per patient from three to ten times as much as efficient out-patient service, a dispensary, if so equipped as to be efficient, is a money-saving investment for a community.

Of course, there is much to be said on the side of the hospital's service to the dispensary: the dispensary needs the hospital exactly in the same way as private medical practice and the community as a whole need it. The hospital is the center of medical work for its community. The intensive study of acute and serious disease; major surgery and its advancement; scientific laboratory research; and the training of physicians and nurses—have a place in the dispensary, but their center in the hospital. Private medical practice and dispensary service are alike dependent upon the hospital in this sense.

From the clinical standpoint, the dispensary is related to the hospital very much as, in private practice, the physician's office work relates itself to his visits to patients in their homes. There is another standpoint,—that of the administrator: Is not the dispensary subordinate to the hospital so long as physicians and surgeons seek hospital appointments as the great prizes, and leave dispensary appointments to the young men or the second-raters?

The truth is that, so soon as we recognize that the dispensary has special functions of its own, of high importance from the standpoint of public health, we shall develop physicians who are interested in performing these functions. Public health work (*i.e.* in the health departments of cities or states) is passing through just this evolution today. Many young men now receiving their medical training are debating seriously whether they shall take up practice, or enter salaried health service. The dispensary does perform—and in the future will be more fully recognized as performing—a type of medical work of special interest to certain men.*

* The dispensary will not cease to be a field in which, as Dr. Osler said, the younger members of the profession will receive training. They will seek appointment in the dispensary during their period of study, perhaps to leave it later. The chiefs of service in the dispensaries of the future, however, must take up the work as a branch of public-health service which they choose as a career. Such positions must, of course, be salaried.

PREVENTIVE WORK.

The final function of the dispensary lies outside the sphere of clinical medicine, and wholly in that of preventive. The dispensary has unequalled opportunity as a center for the instruction of patients and their families in hygiene. Out-patient clinics dealing with large numbers of the sick, develop a host of contacts with the well, especially the well members of the families of their patients. The dispensary should be an effective center for lectures, exhibits, and the dissemination of literature upon health subjects. Finally, the dispensary is in a position to supply periodical medical examinations on a more efficient and more economical scale than is possible in any other way, because in the dispensary may be found a group of specialists, who, through coöperation, can make the most thorough study of a patient. Modern medicine is preaching that everybody should have periodical medical examinations, in order not only to discover physical defects, but also to develop the individual's knowledge, so as to promote his health and working efficiency.

APPLYING MEDICAL KNOWLEDGE IN PRACTICE.

The wonderful progress of medical science, since the epoch-making discoveries of Pasteur, has brought knowledge sufficient to control many of the most serious diseases of mankind. This progress has been achieved chiefly through scientific research, in which hospitals, medical schools, and practitioners have coöperated with the workers in pure science—chemists, physicists, and bacteriologists. The present generation should not diminish its support for scientific research along medical lines, but it should and must greatly enlarge its provision for rendering the fruits of this research of practical benefit on a large scale. Although in case after case, the cost of disease has been proved to be greater than the cost of prevention, the general public is not yet sufficiently penetrated with the new knowledge to support the initial expense of applying it among all classes of society. There is now a rapidly-advancing interest in public health work of all sorts, and this growing interest really means that the public is gradually becoming ready to pay for putting scientific knowledge into practice.

In this process of application, the dispensary will play a large part. Curative medicine has found that, in dealing with bed cases, medical organization is essential to the best results. Curative medicine is appreciating more and more the importance of dealing efficiently with ambulatory cases, and is finding that here also medical organization among complementary specialists is a prerequisite to the most effective work. This medical organization simply means: the dispensary. Preventive medicine will continue to develop city-wide, country-wide programs, and apply them as Colonel Gorgas did at Panama; but in individual case-work, where preventive medicine must also be applied, the dispensary is the best field of large-scale application.

Up to the present time, the serious, and, on the whole, the just criticism of dispensary work has been its relative inefficiency, due to inadequate equipment, insufficient staffs, incoherent organization. So long as the dispensary is regarded as merely a "soup-kitchen" or a "feeder," it will continue to be treated as secondary and it will be second-rate. So soon as its proper medical functions, and its special contributions to public health, are recognized, it will be treated as an institution which must be efficient, and the funds and energy which are necessary to make it so, will gradually be forthcoming.

SUMMARY.

The main points in this paper may be summarized as follows:

1. The dispensary developed as a medical soup-kitchen.

2. It became also a feeder for hospital wards and for medical teaching.

3. The dispensary has therefore been merely secondary in medical work.

4. The development of modern medicine has created specialists, and the best medical work can only be done as the team-work of specialists.

5. The work of specialists demands such elaborate equipment, and their team-work requires so much time, that it is impracticable, on a basis of private practice, except for the wealthy.

6. Dispensary organization, as now developed, is applicable not only to "help the poor," but to provide medical service for those who can pay reasonable fees. In no other way can the best medical service be made available to the people as a whole.

7. The organization of self-supporting dispensaries, on a business though not a merely commercial basis, is thus called for in the near future.

8. The dispensary has a special medical field of its own. In this field fall a large group of important diseases, and many other diseases in their early stages. The dispensary is also peculiarly adapted for preventive work.

9. The dispensary and the hospital are interdependent: the hospital is the center for advancing medical knowledge and medical education in its community; the dispensary is a center in which medical knowledge is to be applied for the benefit of the largest proportion of the population. The dispensary feeds hospital wards, follows up discharged patients (thus promoting hospital efficiency), and forestalls the need of hospital service by detecting and curing illness before it requires bed care (thus promoting economy of hospital service).

10. Criticism of inefficient dispensary work is wholesome. The number of dispensaries in the United States has increased from about 100 in 1900 to over 700 in 1914. Standards of service must now catch up with magnitude of service.

AN ANALYSIS OF ONE HUNDRED CASES STUDIED IN CONNECTION WITH THE MUNICIPAL CRIMINAL COURTS OF BOSTON.

BY V. V. ANDERSON, M.D., BOSTON,

Medical Officer, Municipal Criminal Courts.

OF the many wonderful strides of modern civilization none are more striking than the reduction of disease and mortality. The elimination of those terrible pestilences, small-pox, yellow fever, bubonic plague, malaria, etc., that once depopulated great districts has proven one of the greatest blessings that science has ever contributed to mankind; making habitable desolate and pestilence-ridden districts and saving millions of human lives; making possible such feats of undertaking as the Panama Canal, more a lesson to the world in the prevention of disease than in engineering skill, for the French failed not because of their poor engineering ability but because of the terrible death rate from yellow fever, malaria, etc. So high was the rate of death, that one, it has been said, could walk across the Isthmus on dead bodies. With the discovery of the causes of yellow fever, malaria, bubonic plague, etc., by our laboratory investigators, and the utilization of this knowledge by the medical profession in the eradication of these diseases, the Isthmus of Panama is practically a health resort, its death rate being lower than some of our American cities.

Compare the extraordinary death rate in our Civil and Spanish-American wars due to typhoid, many thousands in each succumbing, with the almost total absence of typhoid among the Japanese in the Russo-Japanese war. A feat of prevention; a memorial to preventive medicine.

So in our fight against the diseases of childhood, the diseases of middle life, and in the great battle against the White Plague, the key note of all our progress is prevention.

Now in her social problems, Society has similar methods to pursue. Crime must be looked at in the light of natural phenomena, and an effort made to discover the underlying causative factors that are responsible for its production. This is not to be done by hasty generalizations, not by the guesswork of untrained observers, but by patient and persistent study at the hands of those trained in methods of scientific research.

Dogmatic assertions have been made that poverty, social inequality, alcoholism, or what not, was at the basis of crime. The burden has been laid on a faulty environment, and efforts have been made to eradicate it by improving social conditions. The expected decrease, however, has not come about. It still remains one of the most serious problems that Society has to face. One state alone, last year, spent thirty-five million dollars in handling the crime problem.

Almost universally now are earnest students attributing this failure to the fact that in our search for the causes of crime we have overlooked the most important factor in the whole situation, the criminal himself. We have sought for external conditions associated with crime, and passed by its real source. We have overlooked the real springs of human conduct, the impelling forces within the individual that drive him to commit a criminal act, and have directed our attention on the act itself together with the environment within which the criminal lives. As might have been predicted, the treatment administered under such conditions, being simply plain guessing, based on nothing more than intuition,—without an adequate diagnosis of the criminal himself, of what he really is and really needs,—has very often missed the mark.

Now if we are to make any progress in the handling of the crime problem, if we are to get at the very roots of crime, we must adapt the particular treatment to each individual offender as he needs it. This is not a matter of guesswork, but depends upon the constitution of the offender; it depends upon a knowledge of the psychopathical makeup of the individual himself.

In the practice of medicine if we should treat a man with typhoid for tuberculosis, our ignorance might be the cause of his death. In these modern days we demand a careful examination and diagnosis before we begin the treatment of a disease. We want to know just what is the matter with our patient, else our ignorance is liable to result in disastrous consequences. The same thing is true in the treatment of the criminal, except that the Court's failures are followed by recidivism rather than the death of the patient.

If our Courts are in sympathy with the spirit of progress, if they desire to improve the present court procedure and reduce perceptibly the apparently increasing criminal army, they have it within their power to utilize the same scientific methods for careful examination and diagnosis, as well as prognosis, before they undertake to say what kind of treatment shall be meted out to an offender.

The need of such a rational procedure I am sure requires no unnecessary urging, for it must be self evident how different should be the disposition of the case of a mental defective from that of an individual capable of profiting well by experience; or in what a different light are we to view the misconduct of an epileptic from

that of a normal individual; or the entirely different type of disposition required in the case of a mentally deteriorating chronic alcoholic from that of a mentally disordered inebriate; problems that are at the very root of crime.

With these things in mind I have made a hasty analysis of my last one hundred cases, in order to illustrate the varying types of individuals that are to be met with in the ordinary daily run of the court, as well as the great importance of handling each according to the particular problem he or she presents.

Before proceeding with the discussion of our cases, it might be profitable to speak of the methods used in studying these individuals. First, our purpose is to secure as accurate a life history of our individual as is possible. This is secured from the individual himself, from relatives, from acquaintances, and whatever sources are available. We aim to go rather carefully into the family history, looking for any heritable defects or traits. Next, the personal history, starting from birth, through infancy, childhood, adolescence and adult life; in other words, a careful developmental history up to the present. Then a study of his habits and instincts, an estimation of his ethical relations, and an examination of those qualities that constitute his value in relation to his fellows. Finally, an evaluation of his present environment as far as such is possible. Next, our purpose is to get an idea of his present physical condition. The neglect of fundamental matters, such as the investigation for sensory defects and causes for general weakness, is absolutely inexcusable, so great is their relationship to the production of criminality. Finally, and most important of all our investigation of the offender, is the study of his mental life, which may be arranged under two headings: first, the psychiatric method, investigating for the presence of mental disease; second, and by far the more important, the psychological. Here we lay under tribute the psychology of individual differences and the impelling forces of human conduct. That method of psychology to which I wish to call your *special attention*, however, is the method of mental tests.

By mental tests we mean the experimental determination of mental capacity, the scientific measurement of mental traits. It is a method superior to casual observation, inasmuch as it is purposeful and methodical. It is a method common to experimental investigation at large, in that one is able to control conditions, subject the obtained results to quantitative treatment and secure the possibility of repetition. The giving of mental tests to offenders is in almost every case an indispensible condition for diagnosis of the individual. Surprising defects and aberrations may be found in many, even apparently normal, and surprising capabilities may be discovered in some who appear sub-normal. The grading of vocational aptitudes is in very general terms possible by the use of tests.

The examination should include; first, a scale of tests that would give us some idea of his mental level, as compared with that of a normal individual; second, a determination of our individual's various mental powers and traits, such as different types of memory, powers of mental representation and analysis, ability to plan, or to show foresight, ability to appreciate rational relationships in various ways; his psychomotor abilities, and so on. In general, we desire to determine by our various tests what are the capabilities, the adaptabilities, the needs, of our individual. For such purpose we have at hand the Healy and Fernald tests, and various methods that have been standardized by the psychological laboratory.

Having thus before us a life history of our individual, of his present physical and mental condition; a fairly accurate knowledge of his mental capacity; of his mental traits; of the preponderating opportunities and interests as shown by study of his mental content. This information is laid before the judge in the following manner:

We have here an individual with,—

1st. Such and such physical characteristics.
2nd. Such and such mental abilities and mental traits.
3rd. Committed such and such types of delinquent acts.
4th. In the background are such and such conditions of defective heredity, pathological development, injuries, early teachings of immoral conduct, bad personal habits, lack of educational opportunity, or what not.
5th. In the light of his being what he is, physically and mentally, and having this background, we can offer on the basis of known predictability, such and such a prognosis, if such and such treatment is afforded in such and such an environment.

One may ask, why is all of this elaborate scientific investigation necessary? Why should the courts or society in general concern itself with a careful diagnosis of the capabilities and adaptabilities of individuals whom it is forced to consider as serious social problems?

As hinted at in the beginning of our paper, it seems quite clear to anyone who thoughtfully views the general situation, and especially the procedure of courts which deal with offenders, that the agencies intended to produce the desired reform are set in operation without any careful ascertainment of the actual needs of the individual himself. In other words, treatment is undertaken without diagnosis.

A most cursory inspection shows that daily there appear in our courts many cases presenting extremely difficult problems. This fact, together with observation of the failures of insti-

tutional treatment, is leading many people who are acquainted with first-hand facts to the conclusion that perhaps one of the greatest causes of the lack of success in our handling of criminals has been our neglect of the study of their actual mental conditions, and the paramount importance of psychological work and mental tests in this field is self evident.

It is quite clear, and needs no argument to prove, that the judge, with his slender opportunities for observation of the offender, and his lack of results of carefully conducted examinations, is often in a poor position to do the best that could be done.

We know too much about mental defectives, who have the gift of language, appearing bright, and with good enough presence to readily pass muster in court; we know too much of defectives who can do well under the prescribed conditions of institutional life, to believe that without competent psychological examination differentiation can be safely made between those whom it is wise for society to allow out on probation and those who, in the interests of social protection, should have proper institutional, or other guardianship.

We are now prepared to discuss more particularly the results of our analyses of one hundred cases. In the first place, our individuals appear on the court record under the following offences: 22 cases of larceny, 45 cases of drunkenness, 6 cases of assault and battery, 1 case of selling drugs, 10 offences against chastity, 2 cases of running away from home, 2 cases of vagrancy, 7 cases of non-support, 1 case of highway robbery, 3 for threats, and 1 for obtaining goods under false pretenses.

Admitting that there are extra legal considerations, and taking the view that our individual must be handled in the light of what he is as well as what he has done, we find that our 22 larceny cases contain 8 feebleminded individuals, 2 cases of dementia praecox, 3 constitutional psychopaths, 4 sub-normal individuals, 2 epileptics, 1 case of ataxic paraplegia and 2 normal individuals.

Of the 45 individuals arrested for being drunk, our records show that 11 of them were feebleminded, 3 were suffering from dementia praecox, 1 was a case of alcoholic hallucinosis, 17 were constitutional psychopaths, 5 were sub-normal in mentality, 5 were epileptics, 1 senile dementia, 1 hysteria, 1 normal.

Of the 6 arrested for assault and battery, 3 were feebleminded, 1 dementia praecox, 1 epilepsy, 1 normal.

The one individual arrested for selling drugs was a general paretic.

Of the 10 individuals arrested for offences against chastity, 5 were feebleminded, 3 were sub-normal in mentality, 1 was an epileptic, 1 normal.

Of the 2 individuals arrested for running away from home, 1 was feebleminded, and 1 was sub-normal.

Of the two vagrants, 1 was feebleminded and 1 was a constitutional psychopath.

Of the 7 cases of non-support, 1 was feebleminded, 1 was suffering from dementia praecox, and 5 were constitutional psychopaths.

The one individual arrested for highway robbery was, from the intellectual standpoint, normal. He was a boy under 21 years of age, who quite early began to show criminal tendencies. There was in the background no family control, grew up in the streets, early bad associates. Mental examination showed a very quick, active mind, vehement rather than stupid, of an adventurous disposition, not in the least suggestible, and of strong anti-social tendencies.

Of the 3 cases of threats, 1 was suffering from dementia precox, and 2 were constitutional psychopaths.

Finally, the one individual arrested for "obtaining goods under false pretenses," was a constitutional psychopath, who had been on one of his periodic drunks for several weeks, was markedly disordered mentally and had a partial amnesia for the events at the time of examination. (The stupidity of his offense was most evident: he was ordering goods in the name of another man, and having these goods sent to this man's place of business. The receiver of the goods made complaint against him, and he was arraigned in court, where he still persisted in giving his name as that of another man.)

So that if our courts would substitute for the vagueness of moral responsibility the natural responsibility of the psycho-physical constitution of the offender and for the concept of punishment that of treatment we would have in these 100 cases the following facts for our judges to consider along with the record of their misconduct: first, that 30% of them were feebleminded, mentally defective individuals, not criminals in the sense of innate wickedness, but weak minded defectives, incapable of understanding and measuring up to the dictum of society. Individuals who from the very nature of their own non-development, fail to understand their obligations to the order of society and who consequently fail to obey its mandates. Individuals who more easily become entangled in the meshes of crime, simply because of their stupidity; who naturally, because of their greater economic stability, when at large, drift into prisons, alms-houses, hospitals and other institutions. Unteachable, unemployable, a nuisance to themselves and everyone else, without a place in the economic régime of a law-abiding community, the position of the unsupervised defectives is extremely forlorn, and can hardly fail in the long run to compel them to swell disproportionately the criminal ranks. The treatment based on giving them another trial, on sentencing them to a short term of imprisonment, is not even touching the problem. It ignores not theories,

but facts. After a short term of imprisonment the mental defective is turned out into society again unmodified, no more adaptable to social conditions than the day he was sent to prison, and after a short period of freedom again he is found in the courts, and off he is sent to prison again for another short term, again out into society and then back into the courts—off to prison again, and so the vicious circle goes.

The question presents itself: what is to be done with these mental derelicts who form a large part of the criminal army to be seen passing through the courts of our larger cities? First, their reactions should be differentiated from real crime. How? By an examination at the hands of a psychologist and alienist. When? At the time of the investigating court trial. The court should be furnished the necessary scientific assistance to secure an accurate and positive diagnosis and classification, and on such findings the accused should be *committed* to such an institution as is best suited to the particular needs of his case, where intelligently directed efforts may be made to render him adaptable, *if this be possible,* to the demands of society.

Our courts would have to consider further, that out of our one hundred cases eight per cent. were suffering from dementia praecox, a form of mental disease, a psychosis essentially of adolescence, characterized by a dementia tending to progress, though frequently interrupted by remissions; a mental disease, in the etiology of which heredity plays a marked rôle; often recurring repeatedly in the same family. Inasmuch as their anti-social conduct has its basis in a delusional background, sentencing them to a short term of imprisonment in no way solves the problem. Here, too, their reactions should be differentiated from crime, and they should be *committed* to such an institution as is best suited to the needs of the case.

One per cent. had alcoholic hallucinosis, a condition not likely to be overlooked, even in the crude methods of examination incident to the ordinary court room procedure.

Twenty-nine per cent. were constitutional psychopaths; a most important type for our courts to recognize, inasmuch as they form such a large part of the criminal army. Careful psychological examination shows that these individuals are in no sense defective in intelligence, and that they are not suffering from any form of psychosis; but that they have certain anomalies of character which lead to a rather inefficient type of adjustment to their environment, and that they sometimes become actually disordered. The most striking defects found in those individuals is in the field of volition. They seem to be inhibitionless. Their problem is a most difficult one, and always requires an understanding of the causative factors in the background, the impelling forces of their conduct, if it is in any sense to be solved.

Thirteen per cent. of our one hundred cases were sub-normal individuals, who according to the mental tests appeared to rank between the feebleminded and normal in intelligence. Not quite so capable of complying with the demands of society as the normal, they accordingly fail to conduct themselves in such a manner as to avoid coming in contact with the law and thus appear in a greater proportion in the army that passes through the courts than do those of normal intelligence. They are individuals far more capable of profiting by experience than the mental defectives, and thus more amenable to proper remedial measures.

Nine per cent. were epileptics, possibly the most important of all this entire group for society to recognize, inasmuch as their reactions are absolutely unpredictable. Mental tests on these individuals show rather interesting results: one gets different levels of intelligence on different days of examination. But the important thing for society to know is that the most serious and revolting crimes are often committed by these individuals; that after an epileptic attack they often act as pure automatons; that the tendency in the majority of all cases is toward mental degeneration.

One per cent. had general paresis; an individual with the most bizarre delusions of grandeur, and was committed as insane.

One per cent. ataxic paraplegia; a disease of the spinal cord that has associated mental symptoms and changes in conduct; and six per cent. was normal. The latter group no less demanding individualization than the most serious of the others, inasmuch as among them is to be found the opportunity of making out of so-called criminals, non-criminal and useful citizens. Especially is it true of this normal group that what society does or fails to do for them is shown in their reform or tendency to a repetition of the criminal act.

As previously stated, this group of one hundred cases by no means represents the actual percentage of abnormal classes among those accused of crime. On the contrary, it only represents a series of individuals picked out by judge, or probation officer, as manifesting sufficiently abnormal conduct to warrant a mental examination. But it does serve to call attention to the need of careful examinations and accurate diagnosis of a very large percentage of those individuals upon whom our courts are to pass judgment, if the problems which they present are to be satisfactorily solved, and a repetition of their anti-social conduct to be avoided. It serves to call attention to the fact that behind every individual's conduct there are certain causal factors within the individual himself that cannot be ignored. This does not in any sense diminish punishment or loosen the safeguards of society, but it serves to direct them along more rational lines.

A study of the 45 cases arrested for drunkenness showed some rather interesting results; six

more individuals were added to this group inasmuch as alcohol seemed to be the exciting causal factor in their conduct, making all told 51 cases.

These cases could be readily grouped into two distinct types: the "periodic drinkers" or "inebriates," and the "steady drinkers," or "alcoholics."

The inebriate seems to be an individual who has distinct drink paroxyms which subside and are followed by periods of sanity and rational thought and conduct. Suddenly the storm breaks out again, and he drinks to great stupor, and is clearly insane. From this he recovers, only to have another paroxysm. As in the epileptic, these seem to be convulsive fits which are uncontrollable.

Thirty-seven of our 51 cases were periodic drinkers of the inebriate type. Of these 67.5% were constitutional psychopaths, inhibitionless, neurotic types of individuals, of good intelligence when not under the influence of alcohol, but who drink spirits convulsively. Thirteen and five-tenths per cent. were epileptics; 2.7 % suffering from hysteria; 2.7% alcoholic hallucinosis; and only 13.5% defectives. So that we may say that the periodic drinker is a neurotic, an unbalanced and an unstable type of individual, in whom alcohol acts in an explosive manner, and is not a defective or insane. He is not an individual demanding any prolonged institutional treatment, as the periodic nature of his attacks seems to remain unmodified. His mental disorder usually clears up in a short while and he remains perfectly sane until another attack ensues. Over these attacks he has little control. He belongs to a class of individuals whom society must incorporate into its scheme of living and handle by well directed social measures.

On the other hand, the "alcoholic," the "steady drinker," presents quite a different picture. Fourteen of our cases were of this type; "steady drinkers," "alcoholics." Fifty-seven and fourteen one-hundredths per cent. of these were mental defectives; 21.5% dementia praecox; 7.14% sub-normal mentally, 7.14% epileptic; 7.14% senile dementia. All rather serious problems; all showing an insidious, progressive impairment of all the senses, a lowering of the functional activities of the body and a degeneration of the higher mental faculties. The more careful and accurate the measurements on these cases were made, the more positive deviation from the normal became. All of these individuals were institutional cases. All showed evidence of poisoning from alcohol, not that they evinced from casual observation any marked stupidity or mental degeneration; on the contrary most appeared reasonably sane, and some even impressed one favorably.

One case of the group will illustrate the point: This particular individual showed from a physical and mental examination all the physical and mental stigmata of chronic alcoholism, and the examiner felt that prolonged detention was necessary if his condition was to be improved. He made a fairly good impression in court and was given "another chance." When out, the obsession for spirits, the morbid impulse for drink, against which his paralyzed will was absolutely helpless, landed him again in the Tombs within twelve hours, and again for trial he appeared next morning. This is what is to be expected of practically all the alcoholic group. Giving them another chance, or a short term of imprisonment, ignores certain positive physical and mental facts calling for treatment, and that treatment consists in a prolonged detention in institutions suited to their needs.

So that we have the inebriate, a neurotic differing in makeup from the alcoholic, and requiring entirely different measures in his treatment; an individual having periodic alcoholic attacks. Their apparent recovery from individual attacks in no sense constitutes a genuine recovery; always liable to another outbreak. They are a most difficult problem for society to handle. The alcoholic is a more simple problem, in that prolonged detention is usually indicated.

Certain points stand out in the mental examination of these individuals, which may very profitably be applied to court-room procedure in any offenses where the question of alcohol may enter:—

(1) The defect in memory was very evident in all the cases. The derangement of the brain prevents the impression of the senses from being registered with any sort of certainty, and thus varying degrees of amnesia were present.

(2) The powers of perception and discrimination were distinctly impaired. The fine distinctions, the uncertainties, the doubts, characteristics of the average mind when confronted with the complex problems of daily life, give way in the inebriate and alcoholic to a certain positiveness that is misleading. This type of individuals would become dangerous witnesses.

(3) It is quite clear that inebriety and alcoholism do impair the sanity and integrity of brain and body, and that such persons do not possess the free will and ability for self control that is ordinarily attributed to them.

Such work as we have already done tends to lead us away from the theories of criminal law and ethics, and closer to life; tends to cause us to look past the deed to the sources and springs of human conduct; tends to create in us a conviction that in the study of criminalism there are causes and sources that are strong enough to partake of the nature of natural phenomena, and that in neglecting their influence and existence we are disregarding the first principles of common sense. We have come to the conclusion that the commission of crime is largely the result of the mental condition of the offender, and that a study of the mental life of offenders brings appreciation of human differences,—makes us realize that it is impossible for all persons to avoid conduct which is in violation of

the law, just as it is impossible for every one to be truthful, or generous, or courageous.

A careful study of offenders brings to light special defects and peculiarities, and experiences, both personal and social, that have *all to do* with the production of anti-social conduct.

A careful study of offenders leads us away from the old concepts of the Lombrosian school, from the born criminal, to the recognition of the same types as are to be found in the non-criminal class. The difference is one of degree, and not of kind: of a quantitative, rather than a qualitative character. "Some are vicious, some are stupid, some are brutal, some are excitable, some are lazy, some are careless, some are vehement, some are dull." But none seem born criminals. In every stupid mind, in every careless mind, in every mind that is vehement and impulsive, crime finds an easier foothold. One feels that if society is to do its work well, if the question of conduct is to be handled so that society will be protected to the utmost, then it must take cognizance of the facts of mental life under which all conduct is determined; the psychological laws through which, so far as behavior is concerned, we live, and move, and have our very being.

One feels that whenever the problem of human character is in question, whenever it forms the basis of such a complex issue as that of crime, whenever for the improvement of the offender social agencies are directed, or penal measures considered, first of all should be required an accurate diagnosis; a diagnosis that presupposes systematic and positive methods of examination; a diagnosis that lays before the judge a knowledge of the makeup of the offender, that gives him an understanding of the actual underlying causes of the particular individual's conduct, and points to the safest and sanest method of solving the problem.

REMARKS ON THE DIAGNOSIS AND TREATMENT OF EARLY PULMONARY TUBERCULOSIS.

BY JOHN B. HAWES, 2D, M.D., BOSTON.

THE physician who makes a diagnosis of early pulmonary tuberculosis should always remember that in so doing he is assuming a grave responsibility. To stamp a person as a consumptive is a serious matter; to make such a person break up his home and family, give up work, and possibly go to a sanatorium is a still more serious matter, while on the other hand, failure to recognize and treat tuberculosis in the early and curable stages is the most serious matter of all. In addition to this, the physician should always bear in mind the difference between tuberculous infection and tuberculous disease, and, of still more importance, that the former may at any time and often does become the latter.

DIAGNOSIS.

There are two grave mistakes which any physician may make in the diagnosis of early pulmonary tuberculosis. The first and more important of these errors is putting off making a diagnosis until too late; the second consists in making a diagnosis on insufficient evidence.

The chief factors which lead many doctors to delay making a positive diagnosis of incipient consumption and instituting treatment may be grouped as follows:—

1. Waiting for a positive sputum.

How many tragedies are caused by this hyperconservative attitude on the part of physicians. How many patients are lulled into false security by the possession of a postal card bearing the words, "Sputum negative" or "Tubercle bacilli not found." How many doctors have persuaded themselves that a careful chest examination or a detailed questioning of the patient is unnecessary because of the negative sputum. We do not require a positive Wassermann test to diagnose syphilis; we do not always find plasmodia in the blood of every case of malaria; nor do we need an x-ray to diagnose all fractures. Why, therefore, should we so often demand a positive sputum before diagnosing pulmonary tuberculosis?

2. Disregard of the fact that a hemorrhage from the mouth almost always means pulmonary tuberculosis.

Despite the fact that it has been proved beyond a doubt that such a hemorrhage only in the rarest of instances comes from any other spot than the lungs, and despite the fact that every physician in this state *knows this to be true,* and would say so if asked by another doctor, it is unfortunately true that patients with whom a hemorrhage, large or small, has been the initial symptom, are constantly being sent away with the cheerful untruth that the blood comes from nose, throat or stomach.

3. Failure to note and give due weight to constitutional signs and symptoms. Such signs and symptoms may be:—

(*a*) Fever and rapid pulse.
(*b*) Unexplained loss of weight.
(*c*) Loss of strength and energy.
(*d*) Undue fatigue and ease of tire.

I have seen patient after patient in whose lungs I could find little or nothing, but who constitutionally showed clear and definite evidence of active tuberculous disease proved by the subsequent course of events.

4. Failure to take a careful history.

There is probably no disease whose onset is so insidious as tuberculosis unless it be some forms of gastric cancer. There certainly is no condition in which a detailed and painstaking history is of more real value in diagnosis as well as in future treatment.

5. Unwillingness to make a definite diagnosis for fear of losing the patient or of making a mistake.

It is hard to believe that this can be a factor in preventing doctors from making early diagnoses. The experience of any specialist in this subject, however, whether in private practice or at a dispensary, shows only too clearly that this often happens.

6. Being in too much of a hurry.

This is one of the commonest causes of error. The routine taking of pulse and temperature, and of having the patient strip to the waist is too often neglected, while the knowledge of a waiting-room filled with patients is constantly present in the physician's mind. Certain diagnoses can be made in a very short time. It takes but a few seconds to make a culture for diphtheria, or to diagnose various surgical conditions. One cannot and must not hurry in diagnosing incipient phthisis.

These, in brief, are what I believe to be the chief causes of the lack of early diagnosis. I wish to refer now to that other mistake which is often made, and which I fear will be made in the future still more often,—that of making a diagnosis on insufficient evidence. Here I would roughly group what I believe to be the chief factors in causing errors, as follows:

1. Failure to remember that in young adults particularly, extensive signs in the lungs *without* constitutional signs or symptoms are often not of tuberculous origin.

Chronic influenza, bronchitis, an ordinary localized bronchitis, lung abscess, unresolved pneumonia, as far as the lungs are concerned, will often closely simulate a tuberculous process. Aside from the fact that the sputum is negative, the fact that these extensive signs in the lungs are compatible with perfectly good health and a blooming personal appearance and physique is evidence against tuberculosis. The burden of proof, however, still rests with the physician to demonstrate this.

2. Disregard of the fact that in children processes due to either pneumonia or influenza may cause consolidation, produce symptoms, and run a course resembling a tuberculous process in every detail.

I once sent a young girl up to Saranac Lake under such circumstances as this. Signs in the lungs and constitutional symptoms were all those of tuberculosis. Shortly after the child's departure, the young brother came down with a similar attack which cleared up at home. I believe these two cases were of pneumococcus origin. The child was greatly benefited in every way by her sojourn at Saranac, but at another time I should not send her so far away, if at all.

3. Ignorance or forgetfulness of the fact that exophthalmic goitre often closely resembles incipient phthisis.

The distinction between these two conditions may be very hard to make. Absence of definite lung signs, along with a rapid pulse, tremor, slight thyroid enlargement, or exophthalmos, will usually clear up the diagnosis. Treatment is practically the same in either case. In some cases time alone will show the true cause of symptoms.

4. Forgetting that pulmonary syphilis is not so rare as is commonly supposed. Any patient who presents other signs of luetic infection should be put through a Wassermann test. Brilliant cures of so-called consumption are not infrequently brought about by salvarsan, iodide of potash and mercury.

5. Failure to bear in mind that it is perfectly possible for a person to lose weight and strength, become weak and anemic, and even develop a cough and run a fever without these being due to tuberculosis.

In these days when the professional and lay mind is constantly being prodded in regard to tuberculosis and its cure and prevention, it often happens that the young and enthusiastic medical student or physician becomes imbued with the idea that tuberculosis is the cause of all our chronic coughs, colds, and run-down conditions. To a large extent this is undoubtedly true, but the fact that there are other causes of such conditions must not be forgotten.

I have purposely made no mention of tuberculin in the diagnosis of these cases. I do not believe that it ought to play any part among general practitioners in such diagnoses. Likewise in regard to the x-ray, except in the case of children, I believe that only in rare instances it is of much help in discovering cases of incipient phthisis.

TREATMENT.

Leaving now the problem of diagnosis, I shall take up briefly the treatment of incipient phthisis. I classify such patients in my own mind as follows:—

1. Those who will get well anyway, with or without treatment.

2. Those who are going to do badly despite every effort that can be made to save them.

3. Those who need only a comparatively slight change or improvement in their method of living in order to make an apparent cure.

4. Those who should go to a sanatorium, or should at least take rigorous and aggressive treatment for a long period of time in order to get well.

The patients who belong to the first class, *i.e.* those who are going to get well whether or not they have treatment, cannot be picked out beforehand. It is, therefore, utterly unsafe to assume that any given patient belongs to this class, no matter how slight may be the signs and symptoms and how bright the outlook. These patients comparatively rarely consult a doctor primarily for their lungs. It is usually in the course of an examination for some other trouble that there is found a definite history of

a hemorrhage or a period of semi-invalidism years ago, which has been followed by perfect health, without giving up work or undergoing treatment of any kind.

One of my own patients, an incipient case who has done splendidly following a year at Saranac Lake, told me that his older brother while a student at Yale had a brisk hemorrhage, which was undoubtedly of tuberculous origin, and from which he entirely recovered without giving up his work or changing his method of living in the slightest. This man is a typical example of this class.

It is likewise true of those unfortunate patients who must be assigned to the second class, —those who are doomed to go steadily down hill despite all treatment,—that no one can tell with absolute certainty beforehand that such is going to be the case. A few men of long sanatorium experience seem to have remarkable powers in recognizing this type of patient. Dr. Karl von Ruck of Asheville is said to have almost uncanny prognostic abilities. Often it is a sort of unexplainable, instinctive feeling on the part of the physician. In my own clinic at the Massachusetts General Hospital, Dr. P. C. Bartlett, late superintendent of the Rutland State Sanatorium, who assists me, has often remarked concerning a given patient that he believes the outlook in this case to be absolutely bad. In many instances I am unable to see any reason for this. I presume that it is the long sanatorium experience and the opportunity there given to watch patients from beginning to end that gives the physician this power to foretell the future. At all events, whether or not the doctor believes the case to be a hopeless one from the start, he must in no way let up in the care, enthusiasm, or optimism with which he approaches the patient.

The third class of patients, consisting of those who need only a short rest or vacation, or a modified or improved method of living, is constantly confused with those in the next class, which includes those who should go to a sanatorium or else take strict and rigid treatment for a long period of time. The solution of a large part of the tuberculosis problem depends upon the wisdom and foresight which the medical profession uses in distinguishing between these two groups of patients. Whether a given patient should be assigned to the first or second of these two groups depends on:—

1. Family history.
2. Occupation.
3. Financial and social standing.
4. The patient's intelligence and mental attitude toward his disease.
5. Physical makeup of the patient.
6. The mode of onset of the disease.
7. The extent and nature of the signs in the lungs.

A careful study of these various factors will usually enable the physician to assign the patient fairly accurately to one or the other of these classes. A bad family history and an unfavorable occupation or trade, and financial inability to live under good conditions, on the part of the patient, would suggest the more conservative course.

The patient's mental attitude is of the greatest importance. I have sent many patients to a sanatorium simply because they were apparently unable to grasp the seriousness of the situation, and because I therefore deemed it utterly unsafe to allow them the liberty of action which they would have outside of an institution. The physical makeup of the patient is not so important, although naturally the chances are in favor of the strong and robust individual.

In regard to the mode of onset, it seems to me that those cases in which the onset has been very gradual, with a slight loss of weight, gradually increasing weakness and ease of fatigue, are less apt to do well than those in which the attack has been more sudden.

Concerning the signs in the lungs, the presence of much moisture, as shown by râles, etc., would certainly make the physician very cautious in prognosis. I have found it a safe general rule to follow, and there are exceptions to every rule, that patients with bacilli in their sputum should go to a sanatorium regardless of other conditions. Again, I believe that a persistently high pulse-rate means a poor prognosis. If you place a patient in the first of these two classes, and tell him that he only needs a short vacation, a trip to the country, shorter hours, more food, etc., but that he need not permanently give up his work, remember that your duty is not done by merely seeing him once and giving him what you believe to be two dollars' worth of good advice. He should be kept under supervision and made to report once a month regularly for five or six months. He must be made to realize that he is distinctly on trial, and that it is "up to him" to prove that both you and he are justified in not taking more radical measures.

Likewise with those patients whom you do send to a sanatorium or otherwise put under a strict régime, the need of continued observation is essential. Two or three months at a sanatorium never really cured a case of pulmonary tuberculosis. The real cure or permanent arrest only comes after months or years of careful living. If the patient cannot or will not profit by the lessons he has had every opportunity to learn at the sanatorium, his case may as well be given up. Dr. Paterson of the Brompton Sanatorium in England once said to me, "Hawes, you can't cure a consumptive who is alcoholic or a damn fool!" I have every reason to agree with this statement.

REPORTING OF EARLY CASES.

The law clearly states that tuberculosis is a disease dangerous to public health and therefore that it must be reported. Ordinary com-

mon sense and humanity demand that such be the case. For who can tell when the patient with absent or negative sputum will become one with sputum loaded with bacilli? But—and I feel very strongly on this point—just as public safety demands that those cases be reported, humanity demands that they be not made martyrs of, that their trouble should not be made public property, and that their houses and homes should not necessarily be visited time and time again by agents of boards of health, district nurses, and other interested individuals, where this is not absolutely necessary. I freely admit, however, that it is only in rare instances that such visitation should be altogether omitted.

In my own practice, it is my custom in this class of patients invariably to report them, but also to explain to the local board of health that the patient is under adequate supervision, is intelligent, and is not in any way a danger to the public health, if such be the case.

Finally, I would again emphasize the fact that it is the careful study of the patient as a whole,—his history, and that of his family, his occupation, habits and surroundings, his constitutional signs and symptoms,—which will lead to a correct diagnosis, and that were the stethoscope used less and the thermometer and common sense used more, we should not make so many mistakes.

SOME UNUSUAL PHASES OF SIGMOIDOSCOPY.*

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The value of the pneumatic sigmoidoscope as a means of diagnostic accuracy in proctology and in general medicine and surgery is no longer debatable. The better hospitals are rapidly including rectoscopy in their routine examinations and recording the findings thereof in every case where such investigation is in the least indicated. Unfortunately, however, the same cannot yet be said of extra-institutional practice. The average physician, still unappreciative of the possible value of sigmoidoscopy, neither knows how to use the instrument nor with any frequency consults one who can. Even the medical schools, which have been progressive enough to include in their curricula instruction in rectal disease, have not taken any pains to demonstrate to their students the instruments of precise rectal diagnosis. I have been surprised to see how many young men, who come to our hospitals as internes, have never seen a sigmoidoscope in use and much less know how to handle one or interpret the findings.

* Read before the sixteenth annual meeting of the American Proctologic Society, Atlantic City, N. J., June 22-23, 1914.

No time need be spent in enumeration of the pathological conditions which are discoverable by means of the sigmoidoscope. Enough has been written and is easily available along this line, but equally explicit statements of the therapeutic uses of the instrument, which are considerable, are not at hand. Foge's[1] atlas, with case histories and graphic colored plates, has almost nothing to say of such uses. Much the same may be said of Schreiber's[2] fundamental work and of the writings of Strauss.[3] Mummery's[4] small, but excellent, volume treats this phase of the subject only transiently in connection with generous discussion of the diagnostic value. Likewise, in all the American and English text-books on rectal disease, at no one point are all the therapeutic possibilities of the sigmoidoscope suggested, as they might profitably be, in connection with the description of the instrument and the technic of its use.

The most obvious facts about the sigmoidoscope are that it enables one to do, as well as see, things in the rectum with the accuracy of the sense of sight, rather than with the lesser accuracy of the sense of touch, and for three times the distance within the anus, for the finger reaches only 4 cm. and the instrument may pass 30 cm., possibly more. In stricture, if low, the lumen may be felt digitally, and, if high, not at all; but in either case attempted dilation with bougies must be blind, and may possibly involve much traumatic manipulation in the search for it, unless this be avoided by introducing them visually through a proctoscope, preferably of operating diameter, carried up to the constriction. If the stricture is to be divided, a polyp removed, or a bleeding point reached, forceps, knife, snare, cautery or thyrotome (Lynch) can be intelligently used only through a protoscope or sigmoidoscope. I am skeptical as to constipation ever being due to hypertrophy of the rectal valves and have never seen a case which I believed could be explained by this condition; but, if ever justifiable, valvotomy makes such an instrument indispensable. Proctitis and sigmoiditis are as frequently localized conditions due to fecal stasis in the organs involved, or to other causes, as they are parts of a general colitis; and, especially when accompanied by ulceration, are often more effectually handled by topical treatment through the sigmoidoscope than by blind irrigations, which reach and possibly spread infection to healthy mucosa far above existing lesions. Recently I have seen and been impressed with the frequency of sigmoid impaction of feces without similiar concurrent rectal condition, and have found the sigmoidoscope of signal use in diagnosing the condition, affording a means of breaking up the accumulation by long forceps or by pouring in upon it small amounts of hydrogen peroxid with immediate and happy results.

So much for some of the more common uses of the sigmoidoscope and the results of its employment, but occasionally there may be surprising

consequences, sometimes harmful and sometimes beneficial.

Not infrequently the sigmoidoscope produces abrasions and irritation of the bowel which are unpleasant, but which, I believe, are usually avoidable with careful handling of the instrument. As to the more serious consequences of sigmoidoscopy, Tuttle says,[5] "It may be suggested that there is danger of rupturing a weakened and inflamed intestine by such distention, but as a matter of fact it is never so great as to produce any such effect. Whenever the pressure assumes any force, the air will escape through the sphincter or the plug will slip out." I am not so sure of all this, for I have heard, but have been unable to obtain details, of cases of intestinal perforation from pneumatic endoscopy or from forcing the instrument through some ulcerated area. It is not easy to find specific reports of such cases, perhaps from the natural reluctance of any one to tell of results so certain to be construed against him. Some years ago Hill[6] cited a case which had been reported by Sultan.[7] In a woman suffering from chronic intestinal catarrh a rupture from pneumatic inflation occurred above the 20 cm. mark. Peritonitic infection, abscess formation and eventual fatal result followed. This case is also cited by Strauss[8] along with two others. One is from Schreiber.[9] Following an operation for multiple polypi of the rectum a peritonitis appeared which terminated in the death of the patient, and only at autopsy was found a rupture which had been produced by the sigmoidoscope. The other case is from Anschutz.[10] A perforation following an examination was repaired by laparotomy and resulted in complete recovery seven weeks later. Fortunately for myself, but unfortunately for this paper, the accident has never happened to me and I have no case to report. Perhaps the discussion may bring out the acknowledgment of some.

The two cases to follow were simple sigmoidoscopies, done for other physicians in consultation, and afforded unexpected results pleasing to all parties concerned.

CASE 1. Mrs. E. P., American, aged 86, was seen Mar. 13, 1913, at her home in Fall River in consultation with Dr. A. A. Howland. She had had no recent illness except arterio-sclerotic conditions incident to her age, which were rather marked. There was a history of progressive constipation and she had had no dejection for one week previous to the examination. She was in bed, was extremely weak and resented all disturbance. Her general condition warranted a very bad prognosis. She had fever, nausea and vomiting, some abdominal pain and was moderately distended. There was tenderness but no palpable tumor in the lower left quadrant. For the constipation cathartics and enemata had been given repeatedly and without result. The enemata came back as fast as given, and a rectal tube could be inserted only 8 or 10 cm. and was pushed back at once. Her nurse had introduced a finger through the anus and thought she felt some obstruction, which the physician confirmed. My digital examination did not show much but an exaggeration of the common downward pressure into the ampulla of the less fixed structures above. There were no feces in the rectum. I verified this by proctoscopic examination, and within a few hours passed the pneumatic sigmoidoscope for about 20 cm., reducing a fairly marked incipient intussusception, but reaching at the above-named point an impassable angle. Immediately after the examination an enema was given which, unlike all previous ones was retained sufficiently long to produce a satisfactory dejection. On the 14th she had several stools and improved, but on the 15th her symptoms recurred and I repeated the sigmoidoscopy. No feces were found, but the mucosa was then intensely inflamed and edematous and bled freely from the instrumentation. A stormy few days followed, but the bowels were readily kept open with small repeated doses of laxative medicine. She improved steadily thereafter and has remained well since except for a similar but milder attack some months after, which was relieved by gravity injections in the knee chest position. She was in extremis, but the sigmoidoscopy did something which changed the entire aspect of things.

CASE 2. Mr. C. B., Syrian, aged 24, seen Mar. 4, 1910, at the Union Hospital in Fall River in consultation with Dr. M. B. Swift. The previous history was vague, and details of present illness not clear, as he had been treated by other physicians, at another hospital and at home before his removal to the Union. Some weeks before he probably had a pleurisy with effusion and later gastric disturbance, abdominal pains and bloody stools. Previous to my examination he had been seen by several members of the staff and no satisfactory diagnosis made and the indications were not definite for surgical interference. He had an average temperature of 102, pulse 140-50, and cold sweats, and looked septic. He had a leucocytosis of 28,000 to 30,000 with 93-95% polymorphonuclears. Widal was negative. Examination of chest and repeated aspirations in the area of supposed pleurisy were negative. He had nausea and vomiting, some abdominal distention and much pain, to relieve which he laid on his abdomen most of the time. There was an apparent tumor, or pathological resistance, of some size in the lower left quadrant. He was having frequent bloody discharges from the anus with scanty feces. Upon request for a sigmoidoscopic investigation. I passed the pneumatic instrument for about 25 cm. with comparative ease except that an unusually sharply defined fold at the site of what was probably O'Beirne's sphincter was gotten by with great difficulty. There was no rectal or sigmoidal impaction, the mucosa was nearly normal, and the bleeding point or points were not in evidence. After removal of the sigmoidoscope the inguinal mass was at once almost imperceptible. The patient was relieved, began to improve, had a quick and uneventful convalescence, left the hospital shortly, and so far as known, has remained well since. Sequence does not necessarily mean consequence, but improvement in this case followed the sigmoidoscopy so closely that one can hardly avoid some such conclusion.

Such results are explainable on the supposition that the instrumentation cleared away an occlusion which was not absolutely definite in either case. One must consider, first what ob-

structive conditions there were, and second how the sigmoidoscopy relieved them, and probably need not go far to determine either. The notable thing is the apparent infrequency of such cases, simple in origin, serious in effect, yet simple in relief.

Everything in the physiology and anatomy of the human tends to pile up in the pelvis a mass of viscera, some belonging there and some not, but all crowded down upon the pelvic diaphragm and producing a pressure thereon unknown to any other creature; in a word, pelvic visceroptosis. No better recognition of the consequences of this has appeared recently than the working out by Moschcowitz[11] of his theory of the causation of procidentia of the rectum, and his rational and satisfactory operative cure for it. Combine with the above, first the usual hypermobility of the sigmoid due to excessive mesenteric length, and second the existence below of the fixed and more or less open rectal ampulla, and one has the elements necessary to produce the conditions of invagination, angulation and volvulus which are admittedly more common here than elsewhere in the bowel, and which, in varying degrees of mildness and chronicity, I believe to be frequent rather than infrequent, and therefore potentially the cause of acute cases. Cripps[12] and Gant[13] have both called attention to the commonness of chronic invagination of the distal colon and rectum, and Delatour[14] laid considerable stress on the frequency of obstructive sigmoidal angulation, especially in the aged.

Sigmoidoscopy properly conducted, *i.e.* preferably in the knee-chest position or in the nearest possible approach to it, reverses the conditions productive of the above troubles. As in the Trendelenburg position, the pelvis is emptied of all but the fixed organs, and they are pulling away from rather than pressing upon the pelvic floor. And if gravity alone is not sufficient to this end, atmospheric (often alone quite effective) or pneumatic pressure, admitted through the sigmoidoscope, and intelligent manipulation of the instrument may accomplish the desired effect. The result may be the unfolding of kinks, coils, angulations and invaginations, unless they have been of sufficient duration and intensity to bind the bowel by inflammatory adhesions in its pathological position. Foges[15] recounts a similar case history where, in the course of an examination which determined the diagnosis of invagination, the same was disinvaginated by the instrumentation.

In both of my cases the patients were too ill to be placed in the knee-chest attitude but an extremely exaggerated Sims was used. In Case 1 the digital examination showed the sigmoid beginning to invaginate into the ampulla, which was more evident on visual examination and disappeared with the upward passage of the sigmoidoscope. Recurrence of the symptoms was relieved by the same treatment and this time permanently. In Case 2 the instrument passed the sigmoido-rectal juncture with great difficulty, but beyond that with comparative ease. Was it the passage of the angle at this site or the insufflation of air beyond the extreme point of introduction, distending and relieving some unseen kinking or invagination, that caused the deceptive tumor to disappear at once and for good?

The means which relieved the acute occlusion in these cases and the probable way in which it was brought about, all seem too simple to require lengthy dissertation, yet two lives were saved thereby during a mere effort at diagnosis. If the sigmoidoscope may thus *unwittingly* become an instrument of therapeutic value, will not the greater prevalence in its use, which we ask of the profession, bring to light many more cases of similar character, where it may be *deliberately* used as such?

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Clinical Department.

GONORRHEA IN MALE CHILDEN.

By Walter D. Bieberbach, M.D., Worcester, Mass.

Cystoscopist Out-Patient Staff, Worcester City Hospital.

On March 23, 1914, the father of a family of three children consulted me at the genito-urinary clinic at the Worcester City Hospital in regard to a male child of the age of six years. He complained that during the past ten days the child was very restless and had considerable trouble in passing his urine.

On examination a boy of six years of age, well developed physically, presented a marked case of phimosis. There was considerable narrowing of the preputial orifice, so much so that it was impossible to retract the foreskin over the glans penis. About the margin of the prepuce was a copious offensive white discharge. The foreskin was tender, edematous and congested.

At this visit a diagnosis was made of phimosis, the cause being balano-posthitis due to a long tight foreskin. The treatment advised was circumcision and on the following day the child was operated upon.

On account of the marked edema, circumcision was performed under ether. A dorsal incision was made and the flaps were trimmed. The edges were sutured with silk-worm gut.

Some few hours following the operation the child was unable to pass his urine. The dressings were removed and the external meatus was found to be pouted and swollen and glued together. On separating the lips of the meatus there was a free flow of thick white pus which relieved the child, thus allowing him to pass his urine. Microscopical examination of the pus showed a number of Gram negative diplococci both intra and extra cellular. Cultures were made which showed the presence of gonococcus.

A few days after, the mother brought to the clinic the youngest child who was three years old, complaining that he was having similar trouble as his brother.

On examination he presented the same condition as the first. In this case the foreskin was retracted over the glans penis thus showing a free urethral discharge. On microscopical examination the pussy discharge showed the presence of gonococci both by staining and culture. In the case of the boy of six years both urines were cloudy, containing pus and a number of shreds. The first urine of the boy of three years was cloudy, the second clear.

An attempt was made to learn the source of infection. The mother and father were asked to submit to examination, also the remainder of the family, which consisted of a girl thirteen years of age and a boy eighteen years old. This boy was a stepbrother to the other children, his father having been dead for the past few years, and this being his mother's second marriage.

The mother and father denied all venereal disease and on examination were negative. The oldest boy of eighteen gave a history of suffering from an acute attack of gonorrhea four months ago. He had been under the care of a physician and one month ago was pronounced cured. To date he has had no signs or symptoms of the disease. Examination in his case showed no sign of infection and I would say that he was cured. A gonorrheal complement-fixation test was done and reported as negative.

Examination of the girl of thirteen years showed that she had a ruptured hymen and on separating the vaginal wall there was a somewhat free, thin, greyish discharge which on microscopical examination showed the presence of gonococci. Smears made from the urethra were negative. From the absence of the acute symptoms and the microscopical picture I would say that the girl was suffering from a sub-acute or chronic gonorrhea.

The fact that the three children were suffering from gonorrhea was all that I was able to obtain. It was impossible to get a clear history of any of the cases.

The mother and father could give very little information as to the source of the infection. They stated that the boy of six years and the girl of thirteen attended school every day, while the child of three years was kept at home. Furthermore, none of the children was away from home for any length of time. I thought that if someone was sent to the house of the parents to investigate their mode of living we might be able to come to some opinion as to the source of the infection.

The cases were reported to the Society for the Prevention of Cruelty to Children and through their kindness a female agent was sent to investigate the living conditions of the family. Each of the children was questioned closely but no information could be obtained from the two boys suffering from gonorrhea. They were very stubborn and refused to answer questions. The girl of thirteen was taken into a room alone and after careful questioning admitted that six or seven weeks before, while the parents were away one afternoon, the oldest boy of eighteen years placed her on his lap and attempted sexual intercourse. Following this attack she suffered considerable pain and for some time afterwards experienced a burning sensation on urination. She said nothing to her parents of what happened; the reason for this we were not able to have her explain.

On the day of this examination the boy of eighteen learned on his return home that an agent of the Society had been to the house to investigate the cause of the infection. Confronted by his mother on what had transpired he immediately turned about, left the house, and to this date has not been seen or heard from.

CONCLUSIONS.

The source of infection in the two young children was from the girl of thirteen. The three children occupied the same bed. I believe that sexual relations had occurred between the girl and two younger boys. The sexual organs of both male children were well developed and much larger than the average child of the same years.

The girl's infection dates back to the time that she states that the older boy of eighteen attempted sexual intercourse with her. At that time the boy was suffering from subacute gonorrhea and I believe infected his stepsister.

I do not believe that the infection of the two boys could have been obtained from bed clothing or contaminated articles of the household, because during the supposed period that the girl was suffering from her acute infection the two boys were free from urethral infection. While it is possible for the male to become infected from articles that contain fresh gonorrheal pus, it is more probable that such infection would take place from sexual intercourse.

CARE AND TREATMENT OF THE TWO BOYS.

Prophylaxis was placed on both cases. The mother was instructed as to the pussy discharge

and ordered to burn all dressings. She was also warned of the dangers of gonorrheal ophthalmia. The children were placed on a non-stimulating diet. Excess of meat was avoided, also highly seasoned salty food. Liquids were restricted to milk and water, water being used very freely.

For the purpose of catching the urethral discharge and keeping it away from the clothing a small bag was made in which the penis was carried. Absorbent cotton was placed in the bottom so as to catch the discharge.

THERAPEUTIC TREATMENT.

The boy of three years was given ten drops of thyresol daily, while the boy of six was given fifteen drops. From these doses their stomach or kidneys showed no irritation and they were able to take this amount during the course of treatment.

LOCAL TREATMENT.

In both cases the anterior urethra was irrigated every other day with a solution of protargol. I started with a solution of 1:8000 and gradually increased the strength up to 1:4000. Irrigation was performed by inserting a soft rubber catheter into the anterior urethra and gently forcing the fluid through by means of a large hand syringe.

At the end of the first week the boy of six years developed a posterior infection. This was treated by placing the catheter in the posterior urethra just behind the cut-off and gently irrigating the canal. After a few irrigations of the posterior urethra it cleared. At the end of the second week both cases showed very little urethral discharge and on microscopical examination few gonococci were found, the first glasses being turbid, the second clear. At this stage of the disease instillations were substituted for irrigations.

One dram of a quarter of one per cent. of protargol was instilled into the anterior urethra and retained five minutes or until the child complained of pain. This was performed every other day and the strength of the solution was increased until five per cent. was reached which seemed as strong as either child would tolerate.

At the beginning of the fourth week both glasses became clear and the urethral discharge subsided. On stripping the urethra no discharge was obtained. Smears taken from the anterior urethra by means of a swab were negative.

All treatment was stopped and the children were kept under observation for two weeks. At the end of this time no signs or symptoms of the disease being present, they were discharged as cured.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

ANNUAL MEETING, HELD IN THE ASTOR HOTEL, NEW YORK CITY, APRIL 9, 10 AND 11, 1914.

The President, DR. WILLIAM J. MAYO, in the chair.

(*Continued from page* 316.)

THE VALUE OF GLUZINSKI'S TEST IN THE DIAGNOSIS OF GASTRIC ULCER.

DR. JOHAN NICOLAYSEN, Christiania, Norway: Kocher in 1912 recommended Gluzinski's test as a means of making the differential diagnosis between ulcer and cancer of the stomach.

Ulcer, as a rule, is accompanied by hyperacidity while cancer is attended by an atrophic catarrh which causes the disappearance of the free hydrochloric acid.

When cancer develops upon the basis of an ulcer there may be demonstrated at an early stage of the disease an insufficiency of function of the stomach to produce hydrochloric acid. This is made by giving two test-meals, one following immediately upon the other. While the amount of free HCl will increase from the first light meal to the second heavier (beef) one in cases of ulcer, it will decrease in cases of cancer of the stomach.

The author and his assistant, Dr. Grondahl, have examined 86 cases of ulcer of the stomach and duodenum, cancer of the stomach, gastroenteroptosis, appendicular dyspepsia and gall-stones. Of the cases of cancer, only two had free HCl in the gastric contents. These gave Gluzinski's reaction, to wit: the amount of free HCl decreased in the second meal. But the same insufficiency of function was also found in cases of gastro-enteroptosis.

In all cases of ulcer but one, there was found a pronounced increase in the amount of free HCl in the second meal.

This phenomenon may be used as a differential symptom in the diagnosis between ulcer and other diseases of the gastro intestinal canal, which cause dyspepsia.

In two cases referred from the medical ward with the diagnosis of callous ulcer, there was no increase in the amount of free HCl and no ulcer was found by the operation, only adhesions which had given rise to the dyspeptic symptoms.

Gluzinski's reaction is reliable, nevertheless, its result is to be considered only as a symptom which must be judged in conjunction with the other symptoms and the history of the case.

RÉSUMÉ OF THE ROENTGENOLOGICAL DIAGNOSIS OF SURGICAL LESIONS OF THE STOMACH AND DUODENUM.

DR. GEORGE EMERSON BREWER, and DR. LEWIS GREGORY COLE, New York City: The most satisfactory diagnostic method up to the present time has been serial roentgenology, *i.e.* the study of 50 or 60 roentgenograms of the patient in various postures, taken in several series at intervals of two hours until the stomach is empty. We have per-

fected a true roentgenocinematographic machine, capable of making 50 roentgenograms of a single cycle, or 200 roentgenograms of an individual peristaltic contraction from the fundus to the pylorus. The information gained by such an examination includes: Size, position and shape or type of the stomach; activity of peristalsis and width of peristaltic contractions; character of the systole and diastole; depth of the rugae and the direction in which they run; degree of dilatation and the motor phenomena of the descending and horizontal duodenum; character of the pyloric sphincter and of the cap (pilleus ventriculi).

The interpretation of findings has been worked out by a study of about 20,000 roentgenograms of 680 cases. A report on 27 consecutive cases examined roentgenographically by Dr. Cole and operated upon by Dr. Brewer shows the accuracy of the method. The clinical history, physical examination and gastric analysis were unknown to the roentgenologist. In the evidence furnished by this series of 27 cases we find that of the 21 cases definitely diagnosed by the roentgen method, subsequent operation proved that 20 were correctly diagnosed and one incorrectly. In 10 of these cases the diagnosis was negative regarding the presence of a gastric or duodenal lesion, although the clinical history was so strongly suggestive of ulcer or carcinoma as to justify exploratory incision. In not one of these cases was there found an organic lesion. In the six instances in which the roentgenologic diagnosis was not definitely stated, the opinion expressed was correct in four instances and incorrect in two. In other words, in this particular series, a correct diagnosis was made by serial roentgenography in 89% of the cases. The objections to the method are that it requires considerable time and is moderately expensive. In the opinion of the writers, however, serial roentgenography will give more accurate information concerning lesions of the stomach and duodenum than any other method employed at present.

A FURTHER REPORT ON PYLORECTOMY OR EXCISION OF THE ULCER-BEARING AREA.

DR. WILLIAM L. RODMAN, Philadelphia: If ulcers are situated at or near the pylorus, as they are in about 80 per cent. of all cases, and the pyloric end of the stomach and proximal portion of the duodenum can be easily mobilized, pylorectomy, which gets rids of the present ulcers and prevents future ones to a large extent, removing as it does, four-fifths of the ulcer-bearing area, is certainly the operation of choice. The frequency with which hemorrhage, perforation, and cancer, especially the latter, follow after gastroenterostomy renders it inadequate.

If, however, the converse obtains, the stomach and duodenum being bound down by adhesions to adjacent viscera, such as the pancreas, liver, gallbladder, tranverse colon, etc., simple gastroenterosomy, the anastomosis being made about the middle of the stomach, or preferably to its left, should be practised. If the symptoms are not relieved within a reasonable time, then pylorectomy may be performed.

The operation can also be done in two stages in those patients not in good condition, whether it be from hemorrhage, perforation, anesthetic or other cause. It is often best to perform pylorectomy for cancer in two stages, and practically the same conditions may confront the surgeon in ulcer; but, it will be much less frequently the case.

Gastric ulcers, duodenal as well, are more frequently multiple than is appreciated; some excellent authorities state that such is usually the case. All potential dangers are increased with the number and chronicity of ulcers; hence, radical measures are more urgently called for in both varieties.

Ulcers away from the pyloric end, that is, occupying the expanded four-fifths of the stomach, should be preferably treated by partial gastrectomy or removal of the ulcerated area. Although such ulcers rarely undergo cancerization, they frequently bleed and perforate, both of which dangers are increased by the freer movements of this portion of the stomach during respiration, and the further fact that protective adhesions are less apt to form if we except the lesser curvature, which is relatively immobile.

A METHOD OF SUBTOTAL GASTRECTOMY.

DR. FRANCIS T. STEWART: The method of subtotal gastrectomy consists in removing the diseased segment of stomach from left to right, after performing an end-to-side anastomosis between the lower portion of the incision which amputates the stomach and the upper of the jejunum, the operation being so conducted that the suturing necessary to unite the stomach to the intestine is completed before either viscus is opened. It is thought that the operation will prove to be easier, quicker, and safer than the methods usually employed. The operation cannot be understood without studying the illustrations which accompany the paper.

(To be continued.)

Book Reviews.

Manual of Military Hygiene. For the Military Services of the United States. By VALERY HAVARD, M.D.; Colonel, Medical Corps, United States Army, Retired; former President Army Medical School. Second edition, thoroughly revised and greatly enlarged. New York: William Wood and Company. 1914.

This second edition of a well-known manual of military medicine, presents many advances over the original, being increased in bulk from 503 to 786 pages. Published, as it is, under the authority and with the approval of the surgeon-general of the United States Army, it may be regarded as an official work representing the most modern practise of the medical corps. The chapter on venereal diseases advocates venereal prophylaxis, regulation of prostitution, and the restoration of the canteen as a means of making camp-life more attractive and affording safe diversion for troops instead of tempting them to resorts of vice. The book is fully illustrated with seven plates and 251 engravings, and has a new and complete bibliography.

Report of the Commissioner of Education. For the Year Ended June 30, 1913. Washington: Government Printing Office. 1914.

This belated annual report of Dr. Philander P. Claxton, United States Commissioner of Education, records the activities of the bureau of education of the interior department for the fiscal year 1913. Chapters III and IV of the first volume deal with progress in medical and dental education, and chapter XIX with methods and means of health teaching in the United States With regard to the teaching ot sex hygiene, Mr. Fletcher B. Dresslar, author of the latter chapter, says in part, "The main precaution now to be taken is to limit as far as possible the overstatement and exaggeration of supposed facts." There are interesting chapters also on educational topics in other countries. The second volume consists almost wholly of statistics. The entire report is of the usual interest and value, and to physicians especially those portions that deal with medical education and public health.

Variolation in the Eighteenth Century. By ARNOLD C. KLEBS. Giessen, Germany: Alfred Töpelmann. 1914.

This German monograph, published as a volume in the series of data, studies and transactions in the biology of micro-organisms, is a historic contribution to research in immunity. It deals with the early history of inoculation and vaccination, and especially with experimental attempts to produce true variola in the lower animals. There is a bibliography of 119 titles.

Avian Tuberculosis. By L. VAN ES and A. F. SCHALK. Agricultural College, N. D. April, 1914.

This monograph, issued as a bulletin (No. 108) of the North Dakota Agricultural Experiment Station, represents the results of the authors' investigations in a series of 601 domestic fowls with tuberculosis. In birds the disease is typically acquired through the alimentary tract. The disease affects the peritoneum, liver, and spleen. Its diagnosis may be made by the reaction to a tuberculin inoculation into the comb or wattle. The reaction in the latter is more constant and reliable, the comb and the other wattle being used as a control. Many other animals have been proved susceptible to infection with fowl tuberculosis, but the avian bacillus has rarely been found associated with human tuberculous lesions. The work is illustrated with three excellent colored plates and has an appended bibliography of 291 titles.

Etiology of Certain Biliary Cirrhosis of the Hot Countries. By DR. EMILE LEGRAIN, of Algiers. Paris: Maloine. 1914.

In this monograph, illustrated by five figures and five charts, the author, after reporting several cases of biliary cirrhosis of splenomegalic type, points out that such cases have their maximum frequency in regions with endemic dysentery and are very often preceded by diarrheal gastro-intestinal troubles. He believes that they are often manifestations of amebic infection, and may be ameliorated or cured by injections of emetine hydrochloride. His work is a useful contribution to the study of amebiasis.

The Nuclei Tuberis Laterales and the So-Called Ganglion Opticum Basale. By EDWARD F. MALONE. Baltimore: The Johns Hopkins Press. 1914.

This monograph (No. VI in the new series of the Johns Hopkins Hospital Reports), from the anatomic laboratory of the University of Cincinnati, is concerned with the cell-groups of that portion of the mammalian telencephalon known as the pars optica hypothalami. It is based on a study of four complete series of homo, one of macacus rhesus, two of lemur rupus, and three of felis domesticus. It is illustrated by a series of 15 plates, comprising 58 figures, 23 of which are colored, and constitutes a valuable contribution to comparative neurohistology.

The Philosophy of Radio-Activity or Selective Involution. By EUGENE COLEMAN SAVIDGE. New York: William R. Jenkins Company. 1914.

The English works hitherto published on radium, by Dawson and Turner, Finzi, and Newcomet, have been concerned with the purely scientific and practical aspects of its description and therapeutic application. This new monograph, originally intended as an introduction to the author's medical writings, undertakes to elucidate the theory of its action upon living tissues, of radio-activity in general, of the relation between the animate and the inorganic worlds, and of the place of radium as a vital force in the scheme of the universe. It thus deals with the borderland domain between biochemistry and metaphysics, and raises questions concerned with the origin of life, the determination of sex, and the nature of malignant disease and cell processes. Inevitably so much that is speculative is involved in such a discussion that its exact merit and value cannot at present be determined, but must await the verdict of time and the gradual growth of human knowledge.

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RED CROSS PREPARATIONS FOR THE EUROPEAN WAR.

IN last week's issue of the JOURNAL we commented on the preparations being made by the Red Cross of the United States and other countries to render aid to the armies and navies of the several nations engaged in the European War. On Aug. 13 President Wilson issued the following appeal to the American people for money contributions to the Red Cross fund:—

"To the People of the United States:

"The present wars in Europe are certain to impose upon the Red Cross of the nations engaged a burden which demands the sympathy and aid of the world.

"The American Red Cross is earnestly desirous of assisting its sister societies in their endeavors to alleviate distress and suffering among the combatants, and, therefore, appeals for funds to be expended impartially for the relief of the sick and wounded soldiers of the nations at war.

"Contributions for this purpose may be sent to the American Red Cross, Washington, D.C., or to local treasurers of the society in other cities. I confidently hope that the humanity and liberality of the people of the United States, so often manifested in the past, will cause them to respond promptly and generously to this appeal.

"(Signed) WOODROW WILSON,
"President of American Red Cross."

On Aug. 15 the first call for enrolled Red Cross nurses to go on the relief expedition of the American Red Cross hospital ship was issued in New York, Brooklyn, Buffalo, Albany, and Rochester, N. Y.; Philadelphia, Chicago, Boston, Baltimore; Cincinnati and Cleveland, Ohio; Newark, N. J., and New Haven and Hartford, Conn. It is announced that 150 nurses are needed to sail on the first voyage of the Red Cross ship. They will be under charge of Dr. Robert W. Patterson of the United States Army medical corps.

In an open letter to the daily press, Miss Mabel T. Boardman, of the national executive committee of the Red Cross, points out the urgent need of funds for the extensive work to be undertaken.

"Not since the Red Cross Society was organized has that organization been face to face with so great a task as that which confronts it today in the war-ridden countries of Europe. But the Red Cross is rising to the test and already thousands of dollars are pouring into its treasury daily for the work of mercy that it has already set under way to lessen as much as possible the suffering that will follow the clash of the armies of the great European powers.

"In addition to its work on the battlefields, the Red Cross will be expected to have men and means of transportation available for the removal of the sick and wounded from field to base hospitals, to provide the medical and nursing forces that will be needed to carry its work forward, and the providing of countless other things which will be needed to ease suffering and make the lot of the wounded soldier more comfortable. There must be central bureaus of medicine, nursing, material, and intelligence, and each must be in charge of an experienced person with an ample force of capable assistants.

"Now, at a time when so many people in all parts of the world are contributing to the various Red Cross war funds, it is of interest to know what this great organization will do with those funds. First of all it must pay the expenses of its huge field force which will operate with all the armies. It must pay for its great stores of medicines and medical supplies and hospital equipment; it must support a service of intelligence with which friends and relatives can communicate to ascertain the fate or whereabouts of soldiers in the field; and it must organize and have in efficient working order great supply depots, easy of reach and from which can be instantly drawn the articles that are needed in hospital work on so gigantic a scale as that which now faces the Red Cross."

Report from Montreal on Aug. 15 states that the movement to equip a Canadian hospital ship for the war is well in progress.

"A message from Sir Thomas Shaughnessy, president of the Canadian Pacific Railway, at St. Andrews, states that acting on behalf of the company he has offered a ship for this purpose.

The National Chapter of the Imperial Order of the Daughters of the Empire called an emergency meeting in Toronto of all the women's societies of Canada, and it was decided to equip a hospital ship and place it at the disposal of the Admiralty during the war, as a gift from the women of Canada. This offer was met with keen enthusiasm by Premier Borden, their royal highnesses the Duke and Duchess of Connaught, and the members of Parliament. It is in cooperation with this movement that the Canadian Pacific Railway is supplying a suitable ship. As yet the name of the vessel has not been announced."

Report from Paris on Aug. 15 states that two wealthy English ladies have offered to establish a French-English base hospital at Le Touquet, or wherever else may be deemed convenient. This hospital is to contain 2000 beds and to be maintained as long as the war lasts.

On Aug. 17 the Rockefeller Foundation made a contribution of $10,000 to the American Red Cross fund. A unanimous joint resolution was passed on Aug. 18 by the national Congress authorizing President Wilson to admit to American registry foreign-built ships for use by the Red Cross. On Aug. 19 the American Red Cross offer of relief had been accepted by Holland, Russia, France, England, and Servia.

NURSES AND THE EIGHT-HOUR DAY.

A COMPULSORY universal eight-hour day bill has recently been passed by the legislature of the State of Washington. Its acceptance as a law will depend upon the popular vote at the referendum next fall. Interestingly enough, it is being opposed by the nurses, to whom its provisions would also apply. A recent editorial on this subject in the Tacoma *Ledger* says:—

"If the socialistic advocates of the universal eight-hour bill assumed that everybody whose work would thereby be limited to eight hours would support the bill, they were in error. The bill violates common sense by proposing a uniform rule for an immense variety of activities. It was conceived by theoretical dreamers, whose aim is to restrict property rights and ultimately have the state own and operate everything.

"Graduate nurses of Spokane have come out strongly against it. They readily see that few families could afford to employ three different nurses for a day of twenty-four hours, and they understand, too, that it would not be well for the sick to have so many different nurses. There are about one thousand registered nurses in the state, and practically all of them are expected to vote against the bill and to work against it, too, which will mean more votes against it. Should the bill pass when it is referred to the people next November, one nurse predicts that it would drive the sick to the hospitals and would practically do away with nursing in the home."

The real evil of such measures, as with trade unions, is their paternalistic interference with personal liberty of the individual. It is perhaps right to say that no one shall work less than eight hours in twenty-four, but certainly unjust to say that no one may work more. The more liberal a profession, the more elastic should be its time of employment; and nurses have hitherto generally been glad to share the physician's privilege of working over eight hours a day.

QUO USQUE TANDEM!

THE physician making a casual visit to our down-town markets, or to any New England market for that matter, asks himself, "How long, O Lord!" There, exposed to view, without the slightest protection from the flies or dust, are the delicacies which appear raw on our tables in the evening,—berries, fruits of all kinds, lettuce, radishes, oysters. Outside are literally hundreds of market teams and teamsters, and in the immediate neighborhood is a trucking business of every description.

Let us look squarely at this situation for a moment in its medical light. Of the thousands of men working here, there are probably forty to fifty who have active tuberculosis, while the list of those having other contagious diseases, including typhoid, diphtheria, and acute naso-pharyngeal infections, is much larger. Up and down the streets sweeps the wind, depositing dust and dirt on our evening berries. Flies travel back and forth from the street to the booths, picking up manure and sputum and depositing it in like manner. Fortunately most of our food is cooked before being served, but there is enough food eaten raw to cause many deaths and a large morbidity each year.

Here again is an opportunity to wage a "Safety First" campaign, and let no one cry out that the cost of living is high enough already, for it is cheaper to save lives than to have sickness.

It is perhaps not an opportune time to compare some of the European countries with us in many respects, but it is an opportune time

for us to carry on this campaign at home. It is one which they have managed far better than we, who as yet have hardly begun the struggle.

MEDICAL NOTES.

DR. CARREL AS A FRENCH ARMY SURGEON.—Report from Paris on Aug. 13 states that Dr. Alexis Carrel, of the Rockefeller Institute for Medical Research, New York, has joined the French forces as an army surgeon.

SICK-RATES AT VERA CRUZ.—During the week ended Aug. 15 the sick-rate among United States troops at Vera Cruz, Mexico, was only 2.18% as compared with 2.3% for the preceding week, and that of the marines was only 1.93% as against 2.23%.

BUBONIC PLAGUE AT NEW ORLEANS.—Report from New Orleans, La., states that on Aug. 16, 17, and 18, three new human cases of bubonic plague were reported in that city, making a total of 20 since the outbreak of the infection there on June 27.

ENLARGEMENT OF AMERICAN HOSPITAL AT TOKIO.—It was announced on Aug. 15 that the American St. Luke's Episcopal Mission Hospital at Tokio, Japan, is to be extended into a modern international institution.

"Already a large sum of money has been contributed in the United States for this purpose, an American council has been formed, with headquarters at New York and an American woman's auxiliary board will help to make the project successful. The latest step is the organization of a Japanese council, with Premier Count Okuma as president, which promises to furnish land for the hospital.

"The institution was founded fourteen years ago by Dr. Rudolf B. Tuesler, who came from Richmond, Va., as a missionary doctor. It is now an institution of eighty beds with a staff of three foreign and ten Japanese doctors, a nurses' training school with forty pupils and a medical society of about fifty Japanese members. The professors of the medical department of the Imperial University are consultants to the hospital. Foreigners throughout Japan as well as members of the embassies and legations avail themselves of the hospital. The project is to erect a new institution on the pavilion plan at a total estimated cost of $485,000."

BOSTON AND NEW ENGLAND.

NEEDS OF THE BOSTON FLOATING HOSPITAL.—The Boston Floating Hospital has recently issued the following urgent appeal to the public for funds to enable the completion of this season of its work:—

"The demands on the hospital have been greater than usual during the summer of 1914, and, owing to the Salem fire and the disturbances in Europe, the management fears that the subscriptions will not be adequate to continue the work during the present season. If the hospital is to complete its season the management must be assured of raising at least $15,000, and appeal is made to all friends of the hospital to assist in raising this sum. Subscriptions should be sent to George C. Lee, treasurer, care of Lee, Higginson and Company, 44 State Street, Boston.

WORK OF MILK AND BABY HYGIENE ASSOCIATION.—The recently published midsummer report of the Milk and Baby Hygiene Association shows an increase of twenty per cent. in the number of babies for which it cared. From June 1 to August 15, 2126 babies were under the supervision of fifteen physicians and sixteen nurses. During that period last year 1784 babies were under care. The twelve milk stations are filled to their capacity, the largest three being those in the West and North Ends and East Boston.

TRUSTEES OF FOXBORO STATE HOSPITAL.—On Aug. 17 the board named by Gov. Walsh to take charge of the Foxboro Hospital, since its divorce from the Norfolk State Hospital, organized at the State House. The commissioners are: Henry T. Schafer (chairman) of Boston, Isaac Heller of Boston, Dr. S. E. Coppinger of Needham, George C. Shields of Mansfield, Dr. T. J. Scanlan of Boston, Mary A. Mahan of Boston, Joseph H. Guillet of Lowell. Dr. S. E. Coppinger was chosen secretary, Mary A. Mahan was appointed chairman of the finance committee, J. H. Guillet chairman of the committee on commitments, and Isaac Heller chairman of the executive committee. The board assumes the duties of trustees of the Foxboro institution.

DIAGNOSIS OF TUBERCULOSIS IN CHILDREN.—The trustees of the Massachusetts Hospitals for Consumptives have recently sent the following circular letter to physicians throughout the state:—

"DEAR DOCTOR: Do you consider that the prevention of tuberculosis is one of the most important social and medical questions of the day?

"If you believe it is true that protection of the child against tuberculous infection is of paramount importance, do you realize that you as a physician hold the key to the situation?

"Will you read carefully the following plan and coöperate with us?

"Into every household come people either as visitors, boarders or workers, who either continually or spasmodically have tubercle bacilli in their sputum. Children as a rule associate with these people intimately, which association may in a few weeks thoroughly infect the child. If the child is very young and the infection is a virulent or massive one, acute tuberculosis in some form often results and brings about the death of the child. The older children, with greater powers of resistance, check this infection with their glandular apparatus and may remain in good health or perhaps only slightly ailing through school life. It is these children, however, who cannot stand the strain of young adult life and who furnish our thousands of new cases of pulmonary tuberculosis each year.

"It is your opportunity, first to protect these children from infection, and second, to see that they are cared for when such infection has taken place. If you delay making a diagnosis until actual disease is evident the case has probably gone beyond the stage when cure is possible. A diagnosis of 'infection' as contrasted with a diagnosis of 'disease' is the key to this problem. We ask you to help us by reporting these cases, simply as a matter of record, to the State Board of Health, which board will furnish special cards for the purpose.

"The von Pirquet test is of great value in these cases. Any physician in the state who applies to this office will be notified where he can obtain practical instruction in the performance of this test at a place near his home, and also training in the examination of children's chests.

"Furthermore, remember that milk from tuberculous cows is extremely dangerous for young children and urge your patients to pasteurize all milk.

"For these infected children open-air schools are a necessity. Will you not begin now to agitate this question, an early start insuring success in obtaining such schools for next winter.

"Walter C. Bailey, M.D.,
Chairman.
"Arthur Drinkwater,
"George A. Dunn,
"Albert C. Getchell, M.D.,
"Sylvia B. Knowlton,
"Daniel L. Prendergast,
"Simon Swig."

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending August 18, 1914: Diphtheria, 34, of which 5 were non-resident; scarlatina, 9, of which 1 was non-resident; typhoid fever, 6; measles, 23, of which 1 was non-resident; tuberculosis, 38.

The death-rate of the reported deaths for the week was 13.92.

NEW YORK.

Weather and Infant Mortality.—In contrast with the two previous weeks, not only was the general death-rate of the week ended Aug. 17 higher, but the death-rate from gastro-intestinal diseases of infants was also higher. The latter are traceable to the hot weather that prevailed during the past week and again demonstrate that hot weather is the greatest enemy of infants. Undoubtedly when the public is sufficiently educated in the proper care of infants during the summer months, the infant death-rate will be reduced still further, for most of the deaths are distinctly preventable. The task of aducating the public is not an easy one, particularly as each year finds a large number of parents recruited from the newly arrived immigrants. The success achieved during the past years, however, should encourage us to continue our efforts in behalf of infants.

Despite the increased number of deaths last week, the death-rate for the first thirty-three weeks of 1914 still remains lower than that for the corresponding period of 1913.

The Health Department's bulletin issued Aug. 16 shows that there were 132 fewer deaths than during the same week last year. The greatest saving was in infants under one year, and is due, according to the health officials, to the cooler weather prevailing this summer. This opinion is borne out by the absence of deaths from sunstroke and the decreased number of deaths from drowning, falls from fire escapes, roofs and windows.

In discussing this week's mortality, Dr. Shirley Wynne assistant registrar, said: "We should be guided by the teachings of Nature. Last week's mortality figures show clearly that health may be retained and death from the preventable summer diseases avoided if we will only follow a few simple rules of living. In warm summer weather, we should dress lightly, eat sparingly of plain nutritious food, drink plenty of pure water, avoid many of the mixtures sold under the guise of summer drinks, bathe frequently and secure sufficient rest. The

babies may be tided over the warm weather if the same general rules are adopted for their care."

The death-rate for the first thirty-two weeks of 1914 was .35 less than the rate for the corresponding period of 1913. If this decrease in the death-rate continues until January, 1915, the city of New York will have had the lowest death-rate in its history.

SCHOOL MEDICAL INSPECTION.—The *Weekly Bulletin* of the City Health Department denies the correctness of the statement recently made in a German medical journal that school medical inspection in the larger cities of this country was 11% more efficient when conducted under the supervision of the educational authorities than when administered by boards of health. After pointing out apparent discrepancies in the figures quoted, it says: School medical inspection was instituted by health departments for the purpose of giving them a method of reaching children of school age, and thereby not only controlling contagious diseases, but instituting preventive and corrective public health measures among a large class of the population during the most plastic and receptive period of their development. The true purpose is not medical control of school children, but medical control of children of school age. The schools offer the easiest method of reaching the greater part of the children of the city; they serve as clearing houses. In New York, Boston, Chicago, Philadelphia, Baltimore, Cincinnati, Pittsburgh, Buffalo, Detroit, the system is under the control of the health departments. In only two cities of the first class, Cleveland and St. Louis, have the health authorities neglected to appreciate fully the enormous field for public health betterment that lies in reaching the children. Where boards of health are well organized and efficient, the great majority have the system of school medical inspection under their control. In smaller cities the lack of a comprehensive public health program, or meagre equipment of health departments, has resulted in the school authorities taking the initiative. In many communities school boards are more permanently organized and more efficient in their methods than health boards. It is in such communities that the latter have neglected what is undoubtedly one of the most important factors in preventive public health work.

MORTALITY STATISTICS.—The weekly reports of the Health Department show that during the month of July the mortality in the city represented an annual death-rate of 11.83, as against 11.97 in June and 12.19 in July, 1913. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 19 in June to 7.25 in July; the weekly average from scarlet fever, from 10.5 to 3.25; from diphtheria and croup, from 29.75 to 28; from epidemic cerebrospinal meningitis, from 7 to 3; from tuberculous meningitis from 17.25 to 15.75; from pulmonary tuberculosis, from 169 to 143.25; from acute bronchitis, from 10 to 6.25; from pneumonia, from 72.75 to 38.75; from bronchopneumonia, from 81.5 to 59; from appendicitis and typhilitis, from 13.25 to 12.75; from hernia and intestinal obstruction, from 10.25 to 9.75; from cirrhosis of the liver from 12.75 to 11; from Bright's disease and acute nephritis, from 114.75 to 91.75; and from puerperal diseases, from 12.25 to 10. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from typhoid fever increased from 4.75 to 7.75; from whooping-cough, from 5.25 to 6.75; from apoplexy and softening of the brain, from 15.25 to 23.75; from diarrheal diseases under five years, from 37 to 126.75; and from organic heart diseases, from 142.75 to 163.75. The general death-rate, as well as the infant mortality, was the lowest ever recorded for the month of July.

BEQUESTS.—By the will of the late Marcus Muritzer of New York $10,000 is left to the Hebrew Orphan Asylum and $500 each to the Mount Sinai Hospital, Lebanon Hospital, the Montefiore Home and Hospital for Chronic Invalids, and various other charities.

Massachusetts Medical Society

APPOINTMENT OF DR. CHARLES F. MCCAFFREY.—Governor Walsh has sent the name of Dr. Charles F. McCaffrey, of Somerville, a Fellow of the Massachusetts Medical Society, to the Executive Council, as Medical Examiner for the Second District of Middlesex County, in place of Dr. Thomas M. Durell, whose term expired in January.

Current Literature

Medical Record.

August 1, 1914.

1. Roper, J. C. *Serum Treatment of Pneumonia.*
2. Abbe, R. *A Case of Sigmoid Diverticulitis Simulating Malignancy; Demonstrated by Radiographs; Operation and Specimen.*
3. Verbrycke, J. R. *Ulcer of the Lesser Curvature.*
4. Levin, I. *Primary Carcinoma of the Vagina Treated by Radium and Roentgen Rays.*
5. Tobie, W. E. *A Case of Volvulus of the Jejunoileum with Anterior Gastroenterostomy.*
6. Baruch, S. *An Apparatus for Neuro-muscular Training.*
7. Robinson, B. *Conservatism in the Treatment of Disease.*
8. Philbrick, I. C. *Socialization of Medical Training and Practice.*
9. Radley, J. H. *Spinal Subluxations; Their Nature and Cause.*
10. Greeley, H. *The Organism of Small-pox, Chicken-pox, and Vaccinia.*

New York Medical Journal.

August 8, 1914.

1. Nascher, I. L. *Lane's Autointoxication Complex and the Manifestations of Senility.*
2. Woolsey, G. *Conservatism in the Operative Treatment of Simple Fractures.*
3. Horowitz, P. *The Treatment of Diabetes Mellitus with Bacillus Bulgaricus.*
4. Hitzrot, J. M. *Fractures of the Upper End of the Humerus.*
5. Gottheil, W. S. *The Autoserum Treatment of Dermatoses.*
6. Drennan, J. G. *A Gram Negative Streptococcus Pathogenic for Guinea-pigs.*
7. Arnold, J. D. *Some Signs of Danger in Labor, and How to Meet Them.*
8. Juettner, O. *Frederick Forchheimer.*

The Journal of Experimental Medicine.

August 1, 1914.

1. *Adler, I. *Studies in Experimental Atherosclerosis. A Preliminary Report.*
2. Krumbhaar, E. B., and Musser, J. H., Jr. *The Relation of the Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. X. Concerning the Supposed Regulatory Influence of the Spleen in the Formation and Destruction of Erythrocytes.*
3. Austin, J. H., and Pearce, R. M. *The Relation of the Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. XI. The Influence of the Spleen on Iron Metabolism.*
4. Ebeling, A. H. *The Effect of the Variation in the Osmotic Tension and of the Dilution of Culture Media on the Cell Proliferation of Connective Tissue.*
5. Losee, J. R., and Ebeling, A. H. *The Cultivation of Human Sarcomatous Tissue in Vitro.*
6. *MacCallum, W. G., Lambert, R. A., and Vogel, K. M. *The Removal of Calcium from the Blood by Dialysis in the Study of Tetany.*
7. Fleisher, M. S., and Loeb, L. *The Experimental Production of Necrosis of the Liver in the Guinea-pig.*
8. Fleisher, M. S., and Loeb, L. *The Effect of the Intravenous Injection of Substances Affecting Tumor Growth on the Cyclic Changes in the Ovaries and on Placentomata.*
9. Ghoreyeb, A. A. *A Study of the Circulation of the Kidneys Following Ligation of One Ureter.*

1. Adler makes a preliminary report on his experimental studies of atherosclerosis in dogs. All his injection experiments were negative. These included poisoning with nicotine, lead, with bacteria and bacterial products. Feeding experiments with oil, cholesterin and hydrochloric acid gave suggestive findings which, however, require confirmation.

6. MacCallum, Lambert and Vogel removed a large part of the calcium from the blood by dialysis and were able to produce in an isolated extremity of an animal extreme hyper-excitability of the nerves quite like that observed in tetany. Furthermore, when the blood of a parathyroidectomized animal in tetany was replaced with normal blood the tetany was relieved, but when replaced by calcium-poor blood the tetany was not relieved. This seems further proof that the twitching and hyperexcitability of the nerves in tetany is due to the lack of calcium in the blood.

[R. I. L.]

Annals of Surgery.

July, 1914.

1. *Carrel, A. *Experimental Operations on the Orifices of the Heart.*
2. *Meyer, W. *On Bronchiectasis.*
3. *Mumford, J. G., and Robinson, S. *The Surgical Aspects of Bronchiectasis.*
4. *Murphy, F. T. *The Choice of Anesthetic in Operating for Abscess of the Lung.*
5. *Greenough, R. B., and Simmons, C. C. *Results of Conservative Treatment of Cystic Disease of the Breast.*
6. Crile, G. W. *The Two-Stage Operation, Especially in Its Relation to Treatment of Cancer.*
7. *Goodman, C. *Arteriovenous Anastomosis of the Femoral Vessels for Impending Gangrene.*
8. Hertzler, A. E., and Gibson, E. T. *Melanoblastomas of the Foot (Chromatophoroma Melanoma, Melanosarcoma).*

1. Carrel reports opening the aorta and cauterization of the sigmoid valves and patching of the pulmonary artery and arterial cone with a piece of vein. The operations were performed on dogs anesthetized by the Meltzer-Auer method. There were operations of the first type with 2 fatalities. There were 8 of the second type with 2 fatalities. Arrest of circulation was accomplished by seizing the pedicle en masse with rubber-covered Doyen clamps. By thoroughly oxygenating the blood before closing the clamp the circulation could be safely arrested for two and one-half minutes. Entrance of air into the right heart was without accident, but into the left ventricle and aorta caused death. This was obviated by aspiration with cannula and vacuum apparatus through suture line before removal of clamp.

2. Meyer considers pathological anatomy, etiology, symptomatology, diagnosis, course, non-operative and operative treatment. Radiography is of so little value in diagnosis of bronchiectasis that Meyer is about to try insufflation of collargol into depth of trachea and bronchi. Patients who have all subjective symptoms of pulmonary tuberculosis, but with sputum continuously negative for tubercle bacilli, most likely suffer from bronchiectasis, particularly if sputum is of foul odor and taste, and if condition is a sequel of pneumonia, caused by aspiration or otherwise. He remarks upon the frequency of suppurative processes in the central nervous system in the course of the disease, and upon the apparent resistance of the bronchiectetic lung to tuberculosis. Under non-operative treatment is considered Singer's thirst cure, intravenous injection of electrargol, inhalation of superheated air with admixture of suitable drugs, and intrabronchial application of drugs by means of catheter and atomizer. The last two methods, he

believes, merit greater recognition. He has tried the former with some success. Under operative treatment is considered pneumotomy, collapse therapy (artificial pneumothorax, pneumolysis with introduction of a plomb, thoracoplasty, phrenicotomy), ligation of branches of pulmonary artery and pneumectomy. In performance of pneumotomy he advocates free lung incision for control of hemorrhage, incision with cautery rather than knife, and single stage operation except in the very weak. Artificial pneumothorax has been of little value. Thoracoplasty frequently gives great improvement but rarely cures (Meyer has had 1 cure). He has practiced ligation of branches of the pulmonary artery to produce carnification of the lung three times with improvement. Pneumectomy is regarded as the only method certain to effect a cure, but to date the mortality has been 50%.

3. Mumford and Robinson regard lung resection as an ideal method of treatment, but only rarely applicable in bronchiectasis. They have had one cure. They favor preliminary collapse therapy, followed by resection, to resection in one stage. Friedrich's pleuropneumolysis is considered a dangerous operation. They have had two fatalities and one narrow escape. Artificial pneumothorax is advocated in all early cases of bronchiectasis. If it fails, thoracoplasty is not entertained, but lung resection alone considered.

4. In considering the choice of anesthetic in operating for lung abscess Murphy dismisses chloroform as too dangerous; ether, although much safer, has the disadvantage of being a respiratory irritant; nitrous oxide and oxygen is regarded as ideal but, as a general anesthetic, increases the danger of pulmonary infection, and its use is therefore reserved for those cases in which preliminary exploration of the lung is necessary for the localization of the abscess, and for children. In other cases he advocates the use of local anesthesia with or without morphia or scopolamine, with some of the less toxic drugs, such as stovaine or novocaine. He reports two cases so operated; one cured and one ending fatally after a third severe hemorrhage. In both cases the two-stage method was used.

5. Greenough and Simmons have assembled from the records of the Massachusetts General Hospital and from the private records of some of the members of its surgical staff 102 cases of cystic disease of the breast treated primarily by something less radical than amputation, in which gross and microscopical pathological examinations had been made. In 83 of the cases the later results have been obtained. Of these, in 14 instances both breasts were operated upon. They distinguish three main classes: the simple fibrocystic with flattened or atrophic epithelium, and two types showing epithelial proliferation, papillary epithelial and adenomatous epithelial. They have excluded cases of the type known as "papillary cyst adenoma," "villous papilloma" or "duct cancer." Four and eight-tenths per cent. of the 83 cases developed carcinoma of the breast, three after partial plastic resection and one after simple excision of the tumor; 5.9% showed recurrence of cystic disease in the other breast; 9.6% showed recurrence of cystic disease in the breast tissue left by the first partial operation; in 20% therefore partial operation for cystic disease was unsuccessful. They, therefore, advocate the removal of all gland tissue of affected breasts, best accomplished by "subcutaneous amputation" or by elliptical amputation, but where the diagnosis is doubtful by elliptical amputation. Partial plastic resection should be practiced only in earliest and mildest cases.

7. Goodman reports 14 cases of arteriovenous anastomosis of the femoral vessels for impending gangrene. Six were successful. Eight required subsequent amputation; one of these was a side-to-side anastomosis and three were cases with spreading gangrene. Sepsis and advanced gangrene contraindicate the operation. The pre-gangrenous stage is the opportune time for intervention. The resulting improved nutrition in cases of non-septic gangrene, however, permits lower amputation than would be otherwise possible. [T. W. H.]

WIENER KLINISCHE WOCHENSCHRIFT.

No. 12. MARCH 19, 1914.

1. KIRSCHBAUM, P. *The Chemistry and Toxicology of the Toxin of Dysentery.*
2. FRAÜHEL, S. *Discussion of the Above.*
3. KORENCAN. *Regeneration of Long-Bone from Bone Graft.*
4. ROIC, V. *The Removal of Pancreatic Cysts.*
5. KROKIEWICZ, A. *Acute Tuberculosis without Focus.*

No. 13. MARCH 26, 1914.

1. VON TSCHERMAH, A. *Tonic Innervation.*
2. BACHRACH, R., AND LOWY, R. *New Treatment of Kidney Disease.*
3. MATZNAUER, R., AND HESSE, M. *The Wassermann Reaction Technic.*
4. HERTZ, R. *Determination of Residual Nitrogen in the Blood.*
5. BOTTERI, J. *Dextroversio Cordis.*
6. PELIER, S. *Weight of the New Born in Relation to Mother's Circumstances.*

No. 14. APRIL 2, 1914.

1. FREUND, E., AND KAMINER, G. *Serochemistry in Cancer.*
2. *HATIEGAN, J. *The Clinical Sign of Galactosuria in Liver Disease.*
3. POPPER, E. *The Use of "Papaverins" in Treatment of Children.*
4. FINZI, A. *Case of Transcortical Motor Aphasia with Paralysis and Inability to Read Correctly.*
5. KAHANE, H. *Obsessions and Psychotherapy.*
6. RIEHL, G. *Balneotherapy and Skin Disease.*

2. The author's views agree with those of other workers in the same line, namely, that galactosuria appears in practically all cases of jaundice after the ingestion of 40 gm. fasting. In differential diagnosis of liver conditions the quantitative estimation is used. In catarrhal jaundice the amount was from 1.95 to 8.8 gm. In cancer of the liver it was absent in seven cases and less than 1. in five others. In one it was 2.5. In a majority of cases in other liver conditions it was under 1. and never over 2.5. [F. S. K.]

IL POLICLINICO.

JULY, 1914.

MEDICAL SECTION.

1. *CANTELLI, O. *Some Studies on Indol and Its Derivatives.*
2. BOSCO, P. *On Lipemia, Especially in Diabetes Mellitus.*
3. MANTORANI, M. *The Use of Active Serum in the Serodiagnosis of Syphilis by Wassermann's Method.*

1. Cantelli describes some experimental studies of indol formation and excretion in health and disease. His results do not bring out any new facts. Indicanuria is not of importance except as an index of intestinal putrefaction, although a constant excess of indol in the urine denotes a functional deficiency in the organism with respect to protection against poisons in general. [L. D. C.]

SURGICAL SECTION.

1. SCALONE, I. *The Surgical Cure of Basedow's Disease. (To be continued.)*
2. *DURANTE, L. *Clinical and Anatomo-Pathologic Contribution to the Study of Tuberculosis of the Female Breast.*

3. Ligabue, P. *A Case of Subphrenic Abscess. Following Measles.*
4. Nota, A. *A New Procedure in the Radical Cure of Inguinal Hernia in Children.*
5. Sebastiani, A. *Subglenoid Dislocation of the Humerus.*
6. *Azara, P. *The Various Grades of Detachment of the Mesentery in Relation to the Vitality and Function of the Intestine. (Conclusion.)*

2. Durante reports two cases, in women of 33 and 19 respectively, and collects an alphabetic bibliography of 114 titles on the subject.

6. From the results of his experimental work on dogs, Azara formulates the following rules for treatment of traumatic mesenteric detachment.

a. With a detachment of not more than 5 cm. along the intestinal margin, or of 6 cm. at a distance of 1 cm. therefrom, treatment should be conservative.

b. With a detachment of 6 or more cm. along the intestinal margin, resection should be performed.

c. At a distance of 3 cm. from the intestinal margin, a detachment of 15 cm. or less should be treated conservatively, one of 16 cm. or more should be treated by resection. [R. M. G.]

Bullettino delle Scienze Mediche.

June, 1914.

1. Bonfanti, W. *Effects of Iodine Saline Inhalations on the Phosphorus Metabolism.*
2. *Beretta, A. *The Etiology of Gangrene of the Dental Pulp.*
3. Cavina, G. *Puriform Cerebro-Spinal Fluid in Two Cases of Cerebral Hemorrhage.*
4. Montanari, A. *Experimental Stenosis of the Pulmonary Artery.*

2. As a result of his experimental researches on guinea-pigs and dogs, Beretta reaches the following conclusions with reference to the etiology of dental caries.

a. Bacteria circulating in the blood-stream may locate in the normal dental pulp.

b. Their sojourn there may be of varying duration.

c. In the pulp of teeth with a closed root they may remain almost as long as in the lymphoid organs.

d. Bacteria have an affinity for the dental pulp, which for the most part is greater than that for the lymphoid organs.

e. In the dental pulp even under perfectly normal conditions, saprophytic bacteria may be found.

f. It is admissible, at least in certain cases, that spontaneous death of the pulp is in relation to an infection supervening by the hematic route.

g. Acute inflammatory processes, which often supervene in pulp previously dead, are probably to be interpreted as bacterial localizations arriving secondarily by the hematic route in a *locus minoris resistentiae.* [R. M. G.]

Correspondence.

LONDON LETTER.

Clinical Congress of Surgeons of North America.

Notes on the London Session.

London, August 1, 1914.

Mr. Editor: Probably nothing in the way of a surgical congress has ever occurred quite comparable to this now in session in London. It is unique in that it is an association of surgeons which has transported itself bodily from its home in North America to another land, 3000 miles away, and is during this week, beginning July 25, the guest of the hospitals and surgeons of London.

If this, the first day of the congress, be any criterion of the whole week, it can safely be said that for hospitality, cordial welcome and unparalleled efforts to show to the visiting surgeons the best of everything which can interest them, the world has never seen the like. Under the tireless efforts of the London committee of arrangements, headed by Sir Rickman J. Godlee, retiring president of the Royal College of Surgeons, supplemented by the well-known organizing ability of Dr. Franklin H. Martin, secretary of the congress, and his able executive, Mr. A. D. Pallou, the machinery of the congress started this morning without friction, and by ten o'clock the one thousand and more members were distributed about the city in the operating theatres of the thirty hospitals, intent upon the miracles in surgery being wrought by the master surgeons of London. The operating theatres here are small, and designed so, as explained by Sir Rickman J. Godlee in his address of welcome this evening, because the teacher-surgeons of London long ago discovered that efficiency in imparting surgical knowledge required that teacher, patient and student must be in close communion,—in other words, that a small class in close touch with both patient and surgeon gives better results than a large class in a large operating theatre, many of whom are so far away that they can see little or nothing. This is keenly appreciated by the American surgeons now in attendance upon the clinics. Admission to each clinic is by ticket, and no more are issued than each respective operating theatre will accommodate.

Sir Arbuthnot Lane's clinic at Guy's Hospital easily takes precedence in popular interest. You feel as you sit in his little operating theatre as though he is one among you, and that his quiet conversational voice is talking to you individually. His personality is unique,—a rugged face, keen piercing blue eyes, a slightly stooping but athletic figure, which speaks of great reserve physical strength, terse, crisp diction,—and he is a master of forceful epigram and withering, biting sarcasm. Like all pioneers in new and startling enterprises, he has been most caustically criticized by his confreres for his radical measures in the treatment of fractures (bone plating) and his equally bold doings (removal of the colon) in cases of chronic intestinal stasis. But he is a man who strikes back, and follows steadily on in his course of original work and investigation. Here are a few examples of his "back firing": "Bone plates fail in the hands of my colleagues because they do not know how to use them. If they put them in dirty, they are bound to come out. If they are put in clean, they will stay in."

Speaking of specialists—"The more they develop of special sense, the less they have of common sense." "We have lost our common sense." "Common sense is what we need." "We must get at the cause of things." "The physician is like the parson, he is governed by a creed." "The physician's box of tricks (his medicines) is all rubbish." "His little doses of poisons are no good." "We must clean up the food supply."

"I'm telling you what I think. You can form your own conclusion—that's your job."

"The way to do an operation is not to buy a lot of instruments. In my cleft palate operation I use four. An esteemed colleague of mine covers the table."

"The colon is the cesspool of the human body. My distinguished colleagues do everything but the right thing for their cases of intestinal stasis. They pour down cathartics and they pump up enemata, all to no purpose as far as real cure is concerned. Here is a case which has had every possible thing done but the right thing,—ovaries removed, appendectomy, hysterectomy, gastro-enterostomy,—and everything else under the sun has been taken out but the right thing. Short-circuiting the colon has cured her, and she stays cured. Drain the intestine and your cases of chronic intestinal stasis will get well of goitre, cervical adenitis, tuberculosis wherever localized, Raynaud's dis-

ease, Addison's disease, rheumatic arthritis; and their general condition will change from toxemia and malnutrition to good digestion, good assimilation and good health."

"Their tubercular sanatoria are all rubbish, from start to finish—just a popular craze."

"This operation (colectomy) is as simple as any on the palate—any fool can do it."

"It is the most simple operation in the world if you just know how to do it."

"Nothing can be more pathetic than the way this thing (the protruding colon) is asking to come out."

"We'll give this case as much rectum as is justifiable—which is as little as possible."

"You imagine you want a lot of small intestine. It's all nonsense! You can do very well with a couple of feet of it."

"The anatomists (who know nothing about surgery) call these things bands and congenital adhesions. If they are congenital children ought to be born with them, but they are not.

"I find everybody is modifying this operation. They are doing it the way I did it thirteen or fourteen years ago. That's the way they modify it. I've tried all these things."

"I don't know anything about shock from pulling on the mesentery. I pull on the mesentery all I want to. It's all right as long as you keep pumping in salt water. Keep pumping in salt water, and you need have no fear of shock."

"Go to women if you want to learn to sew. If we invent a stitch, we call it after somebody's name. It doesn't do any harm and it pleases people. But the women have known about it all along."

"The biggest fool thing is to do a gastro-enterostomy for ulcer—unless you've got mechanical obstruction."

Whatever may be said of Sir Arbuthnot's original work, theories and results, he is a careful, painstaking, skilful operator—a master surgeon—and he cannot but leave a deep impress upon the history of surgery.

SIR WATSON CHEYNE AND KING'S COLLEGE HOSPITAL.

What historical memories are associated with King's College Hospital! For it was partly here that Lister worked out his epoch-making discoveries and methods which revolutionized the surgery of the world. But old King's College is no more, for a magnificent new group of buildings has been erected far out in the suburbs at Denmark Hill. These together constitute the new King's College and Hospital, and represent the latest and best in hospital construction, design and architecture. It is now a generation and more since Lord Lister achieved his fame. His successor, Sir Watson Cheyne, is now "The Grand Old Man" of English surgery. He represents the type of surgeons of Lister's day—careful, conservative, loth to change methods which have stood the test of time. In his operating room his motto is, "Do not trust to others what you can do yourself." Therefore, he does the last cleaning of the field of operation with his own bare hands, adjusts the towels, dons his gloves, then proceeds rapidly with his work. Carbolic acid is still included in his antiseptic armamentarium and he continues to use sea sponges.

Today's evening session has been one of surpassing interest, including addresses of welcome by Sir Rickman Godlee and Mr. W. H. Page, the American Ambassador, the inauguration of President J. B. Murphy, a scientific paper on "Ulcer of the Stomach" by Prof. von Eiselsberg of Vienna, and an illustrated address by Dr. Murphy on "Arthrodesis." It will be recalled that Sir Rickman Godlee, then president of the Royal College of Surgeons, came to Chicago last November to attend the first convocation of the American College of Surgeons, and by his presence and masterly address did much to add weight and dignity to that occasion. He has been tireless in his efforts to make this London session of the surgical congress a success, both in the preliminary arrangements and his cordial personal welcome to every visiting member. It has been largely through his influence that the Royal College of Surgeons was thrown open to the congress on Wednesday afternoon, and all guests received in state by the president, Sir Watson Cheyne, and his associates. It was like a chapter out of the past to wander through the great library and museum, the largest in the world of their kind, where those mighty men, John Hunter, Sir Astley Cooper, Edward Jenner, and others of past centuries made history and fame.

It is impossible to speak in detail of the many splendid examples of operative skill and technic which have been exhibited by the London surgeons during this week of the congress. In addition to those already mentioned, the writer has been particularly impressed with the special excellence of the work of Bland-Sutton, Berkeley, Handley and Bonny of the Middlesex Hospital; Barker and Spencer, of the University College; Berry of the Royal Free; Messrs. Makins, Battle and Ballance, of the St. Thomas; Sir Victor Horsley, of the National; Openshaw, of the London; Burford, of the London Homeopathic; Tate, of St. Thomas; Eden, of the Charing Cross; and Barrington-Ward, of the Children's.

The evening sessions have been of absorbing interest and largely attended. The only noteworthy variation from the announced program has been the absence of Professor Krönig, on account of the Austro-Servian War. The only real, but brief, disturbance of the serenity of the course of the meetings was an outburst on Friday evening by one of the female furies of England (suffragette), who mounted a chair and succeeded for a time in creating a pandemonium. She was quickly "drowned out" and hustled out. The chairman begged the indulgence of the audience on her behalf, suggesting that she and her ilk might be the innocent subjects of the malady last mentioned on the evening's program—intestinal stasis.

The annual executive session was held Friday afternoon for election of officers, appointment of delegates and committees. Dr. Charles H. Mayo, of Rochester, Minn., was elected president; Herbert Bruce, Toronto, vice-president; Robert L. Dickinson, Brooklyn, second vice-president; Dr. Franklin H. Martin, Chicago, general secretary; Allen B. Kanavel, treasurer. No formal discussion occurred on the plan of the 1915 meeting, but it is "in the air" that Boston is the place where a large percentage of the members would like to gather for the next clinical congress. The total registration has been upwards of 1400, and every state in the Union has been represented.

In the last hours of the congress disquieting tidings are circulating that a cataclysm of war is imminent amongst the European nations. The leading English surgeons have received government notice to be in readiness for field-hospital military duty. American tourists are rushing across the Channel from the Continent, and many of the American surgeons and their families who desire to return to the United States are unable to secure passage or promise of return at either early or remote dates.

Truly yours,

HORACE PACKARD, M.D.

RECENT DEATHS.

DR. HASKET DERBY, one of the founders of the American Ophthalmological Society, and a pioneer in this specialty in New England, died at Falmouth Foreside, Me., August 21, aged 79 years.

DR. SAMUEL A. NICHOLSON, who died on Aug. 17 in Haverhill, Mass., was born at Bambas, P. E. I., in 1874. He was a graduate of the Boston College of Physicians and Surgeons, and had practised his profession in Haverhill since 1903. He is survived by his widow and by one son.